

C  
R 93ZsB  
1911-12

RUTGERS SCIENTIFIC SCHOOL

# THE STATE COLLEGE

for the benefit of

Agriculture and the Mechanic Arts

NEW BRUNSWICK, N. J.

Forty-Eighth Annual Report, October 31, 1912

---

UNION HILL, N. J.  
DISPATCH PRINTING COMPANY,  
1913



LIBRARY  
OF THE  
UNIVERSITY OF ILLINOIS  
8 SEP 13

RUTGERS SCIENTIFIC SCHOOL

# THE STATE COLLEGE

for the benefit of

Agriculture and the Mechanic Arts

NEW BRUNSWICK, N. J.

Forty-Eighth Annual Report, October 31, 1912

---

UNION HILL, N. J.  
DISPATCH PRINTING COMPANY,

1913



# Board of Trustees.

## EX OFFICIO.

HIS EXCELLENCY, WOODROW WILSON, PH.D., LL.D.....	Trenton
<i>Governor of the State of New Jersey.</i>	
HON. WILLIAM S. GUMMERE, LL.D.....	Newark
<i>Chief Justice of the State of New Jersey.</i>	
HON. EDMUND WILSON, A.M.....	Trenton
<i>Attorney-General of the State of New Jersey.</i>	

## BY ELECTION.

<i>Name.</i>	<i>Address.</i>	<i>Date of Election.</i>
REV. WM. H. S. DEMAREST, D.D., LL.D.....	New Brunswick	Mar. 7, 1899
<i>President of the College.</i>		
DAVID BINGHAM, ESQ.....	East Orange	Mar. 7, 1882
TUNIS G. BERGEN, PH.D.....	Brooklyn, N. Y.	June 19, 1883
FREDERICK FRELINGHUYSEN, A.M.....	Newark	June 16, 1885
JAMES NEILSON, A.M., LL.B.....	New Brunswick	June 22, 1886
REV. EDWARD B. COE, D.D., LL. D.....	New York, N. Y.	Oct. 25, 1887
REV. JAMES LEFEVRE, D.D.....	Somerville	June 16, 1888
FREDERICK J. COLLIER, A.M.....	Hudson, N. Y.	June 16, 1891
PAUL COOK, A.M.....	Troy, N. Y.	June 16, 1891
HON. GARRET D. W. VROOM, LL.D.....	Trenton	June 21, 1892
x J. BAYARD KIRKPATRICK, A.M.....	New Brunswick	June 21, 1892
WILLIAM H. LEUPP, A.M.....	New Brunswick	June 18, 1895
REV. J. PRESTON SEARLE, D.D.....	New Brunswick	June 21, 1898
JOHN W. HERBERT, JR., M.S.C., LL.B.....	Helmetta	June 19, 1901
HON. WILLIAM H. VREDENBURG, LL.D.....	Freehold	Mar. 4, 1902
HON. FOSTER M. VOORHEES, LL.D.....	Elizabeth	Oct. 28, 1902
WM. H. VAN STEENBERGH, A.M., LL.B.....	New York, N. Y.	June 17, 1903
HON. ALPHONSO T. CLEARWATER, LL.D....	Kingston, N. Y.	Jan. 14, 1904
HOWARD N. FULLER, A.M.....	Albany, N. Y.	Jan. 12, 1905
L. LAFLIN KELLOGG, LL.D.....	New York, N. Y.	Jan. 12, 1905
REV. JOSEPH R. DURYEE, D.D.....	New York, N. Y.	Mar. 7, 1905
PHILIP M. BRETT, A.B., LL.B.....	New York, N. Y.	Jan. 11, 1906
CHARLES L. EDGAR, E.E.....	Boston, Mass.	Oct. 12, 1906
W. EDWIN FLORANCE, A.M.....	New Brunswick	Oct. 12, 1906
DRURY W. COOPER, A.B., LL.B.....	New Brunswick	Oct. 9, 1908
HON. WILLARD P. VOORHEES, A.M., LL.D....	New Brunswick	June 23, 1909
REV. WILLIAM I. CHAMBERLAIN, D.D.....	Summit	Oct. 8, 1909
LEONOR F. LOREE, M.S.C., C.E.....	New York, N. Y.	Oct. 8, 1909
DUNCAN D. SUTPHEN, A.B.....	New York, N. Y.	Oct. 8, 1909
*S. OAKLEY VANDER POEL, M.D.....	New York, N. Y.	Oct. 14, 1910
+ANTHONY DEY, A.M.....	New York, N. Y.	June 21, 1911
REV. HENRY EVERTSON COBB, D.D.....	New York, N. Y.	Oct. 13, 1911
REV. WILLIAM BANCROFT HILL, D.D.....	Poughkeepsie, N. Y.	Jan. 9, 1912
JOHN HOWARD FORD, ESQ.....	New York, N. Y.	Jan. 9, 1912
HON. WILLIAM SHIELDS MYERS, D.S.C.....	New York, N. Y.	Apr. 12, 1912
HOWARD ELTING, ESQ.....	Chicago	Oct. 11, 1912

x Died September 6, 1912.

\* Died April 22, 1912.

† Died October 11, 1912.

# OFFICERS OF THE BOARD.

REV. J. PRESTON SEARLE, D.D.....New Brunswick  
*Secretary of the Board.*

IRVING S. UPSON, A.M.....New Brunswick  
*Treasurer of the Board.*

---

## STATED MEETINGS OF THE BOARD.

Second Friday in October, second Tuesday in January, and second Friday in April at 2 p. m.; commencement day at 9:30 a. m.



# Board of Visitors.

---

## FIRST CONGRESSIONAL DISTRICT.

EPHRAIM T. GILL.....Haddonfield  
ALEXANDER P. OWEN.....Mickleton

## SECOND CONGRESSIONAL DISTRICT.

WILLIAM T. BAGGS .....Beverly  
FRANK E. BATE .....Fishing Creek

## THIRD CONGRESSIONAL DISTRICT.

DAVID D. DENISE .....Freehold  
JAMES NEILSON .....New Brunswick

## FOURTH CONGRESSIONAL DISTRICT.

PHILIP TODD .....Peapack  
WILLIAM V. MCGALLIARD .....Trenton

## FIFTH CONGRESSIONAL DISTRICT.

NICODEMUS WARNE .....Broadway  
JOSEPH D. BUDD.....Chester

## SIXTH CONGRESSIONAL DISTRICT.

ARTHUR LOZIER .....Ridgewood  
HENRY MARELLI .....Paterson

## SEVENTH CONGRESSIONAL DISTRICT.

GEORGE E. DE CAMP .....Roseland  
GEORGE M. CANFIELD .....Caldwell

## EIGHTH CONGRESSIONAL DISTRICT.

\*GEORGE DORER .....East Orange  
JOHN F. McDONOUGH.....South Orange

## NINTH CONGRESSIONAL DISTRICT.

JAMES MCCARTHY .....Jersey City  
JOHN R. HARTUNG .....Jersey City

## TENTH CONGRESSIONAL DISTRICT.

DANIEL COLE .....Jersey City  
HENRY A. GAEDE.....Hoboken

---

DAVID D. DENISE, *President.*  
IRVING S. UPSON, *Secretary and Treasurer.*

\* Died, April 18, 1912.

## Faculty.

---

WILLIAM H. S. DEMAREST, *President*

A.B., A.M., D.D. (Rutgers); LL.D. (Columbia, Union, Pittsburgh)  
Seminary Place

FRANCIS CUYLER VAN DYCK

A.B., A.M. (Rutgers); Ph.D. (Union); D.Sc. (Rutgers)  
*Professor of Physics and Experimental Mechanics*

11 Grant Avenue

CHARLES EDWARD HART

A.B., A.M. (Princeton); D.D. (Rutgers)  
*Emeritus Professor of Ethics and Evidences of Christianity*

33 Livingston Avenue

AUSTIN SCOTT

A.B. (Yale); A.M. (Univ. Mich.); Ph.D. (Leipsic); LL.D. (Princeton)  
*Voorhees Professor of History and Political Science*

24 Livingston Avenue

LOUIS BEVIER, *Dean*

A.B., A.M. (Rutgers); Ph.D. (Johns Hopkins); Litt.D. (Rutgers)  
*Professor of the Greek Language and Literature*

Bishop Place

ALFRED ALEXANDER TITSWORTH

B.Sc., M.Sc., C.E., D.Sc. (Rutgers)  
*Professor of Civil Engineering*

590 George Street

JULIUS NELSON

B.Sc., M.Sc. (Univ. Wis.); Ph.D. (Johns Hopkins)  
*Professor of Biology.*

Adelaide Avenue

BYRON DAVID HALSTED

B.Sc., M.Sc. (Mich. Ag. Coll.) Sc.D. (Harvard)  
*Professor of Botany and Horticulture*

121 Livingston Avenue

\*JOHN BERNHARD SMITH

D.Sc. (Rutgers)  
*Professor of Entomology*

JOHN CHARLES VAN DYKE

L.H.D. (Rutgers)  
*Professor of the History of Art*

564 George Street

---

\* Died March 12, 1912.



FACULTY.

ROBERT WOODWORTH PRENTISS

B.Sc., M.Sc. (Rutgers)  
*Professor of Mathematics and Astronomy*  
*Director of the Schank Observatory*

7 Grant Ave.

ELIOT ROBERTSON PAYSON

A.B., A.M., (Hamilton), Ph.D. (Rutgers)  
*Professor of the History of Teaching*  
*Associate Professor of the German Language and Literature*

The Bayard

WILLIAM HAMILTON KIRK

A.B., Ph.D. (Johns Hopkins)  
*Professor of the Latin Language and Literature*

35 Mine Street

JOSEPH VOLNEY LEWIS

B.E. (Univ. N. C.); S.B. in Geol. (Harvard)  
*Professor of Geology and Mineralogy*  
*Director of the Geological Museum*

4 Union Street

EDWIN BELL DAVIS

B.L. (Dartmouth)  
*Professor of Romance Languages*

145 College Avenue

IRVING STRONG UPSON

A.B., A.M., (Rutgers)  
*Registrar, Secretary of the Faculty*

64 College Avenue.

WALTER RUSSELL NEWTON

A.B. (Univ. Vt.) Ph.D. (Syracuse)  
*Professor of the German Language and Literature*

39 College Avenue

GEORGE HUBBARD PAYSON

A.B., A.M., D.D. (Hamilton)  
*Professor of Ethics and Evidences of Christianity*

41 Mine Street

RALPH GARRIGUE WRIGHT

B.S. (Columbia); Ph.D. (Basle)  
*Professor of Chemistry*

Bishop Place

ROBERT CULBERTSON HAYS HECK

M.E. (Lehigh)  
*Professor of Mechanical Engineering*

35 College Avenue

FACULTY.

CULLEN WARNER PARMELEE

B.Sc. (Rutgers)  
*Professor of Ceramics*

Adelaide Avenue

FRANK FORRESTER THOMPSON

A.B., A.M., E.E. (Princeton)  
*Professor of Electrical Engineering*

The Bayard

RICHARD MORRIS

B.Sc., M.Sc. (Rutgers); Ph.D. (Cornell)  
*Professor of Mathematics and Graphics*

94 Easton Avenue

WALTER TAYLOR MARVIN

A.B. (Columbia); Ph.D. (Bonn)  
*Collegiate Church Professor of Logic and Mental Philosophy*  
5 Senior Street

JACOB GOODALE LIPMAN

B.Sc. (Rutgers); M.A., Ph.D. (Cornell)  
*Professor of Soil Fertility and Bacteriology*  
*Director of the Agricultural Experiment Stations, the*  
*Short Courses in Agriculture, and the College Farm*

College Farm

ARTHUR EMMETT AHRENDT

First Lieutenant 29th Infantry, U. S. A.  
*Professor of Military Science and Tactics*

The Bayard

KARY CADMUS DAVIS

B.S. (Kan. State Coll.); Ph.D. (Cornell)  
*Professor of Agronomy*  
*Principal of Short Courses in Agriculture*

170 Nichol Avenue

CHARLES HUNTINGTON WHITMAN

A.B. (Colby); Ph.D. (Yale)  
*Professor of English*

189 College Avenue

EDWARD LIVINGSTON BARBOUR

B.O., M.E. (National School of Elocution and Oratory)  
*Professor of the Art of Public Speaking*

172 College Avenue

MELVILLE THURSTON COOK

A.B. (Stanford); A.M. (DePauw); Ph. D. (Ohio State Univ.)  
*Professor of Plant Pathology*

92 Lawrence Avenue

FACULTY.

ALEXANDER JAMES INGLIS

B.A. (Wesleyan); Ph.D. (Columbia)  
*Professor of the Science of Teaching*

8 Richardson Street

THOMAS J. HEADLEE

B.A., M.A. (Univ. Ind.); Ph.D. (Cornell)  
*Professor of Entomology*

29 Lincoln Avenue

JOHN HUBBARD LOGAN

A.B. (Mercer); A.M. (Columbia)  
*Acting Professor of History*

172 College Avenue

WILLIAM EUGENE BREAZEALE

M.M.P. (Furman Univ.); M.Sc. (Rutgers)  
*Associate Professor of Mathematics*

142 Hamilton Street

ALBERT CHESTER DE REGT

A.B., M.Sc. (Hamilton)  
*Associate Professor of Chemistry*

Winants Hall

EDMOND WOOD BILLETDOUX

A.B., A.M. (Williams); Officer d'Académie  
*Associate Professor of Romance Languages*

144 Hamilton Street

RALPH OGDEN SMITH

B.Sc. (Rutgers); M.A., Ph.D. (Univ. Penn.)  
*Associate Professor of Chemistry*

17 Huntington Street

HENRY BRIGGS NORTH

Ph.G., B.S., M.A. (Univ. Wis.); D.Sc. (Paris)  
*Associate Professor of Chemistry*

21 Huntington Street

MAURICE ADIN BLAKE

B.S. (Mass. Agr. Coll.)  
*Associate Professor of Horticulture*

124 Hamilton Street

FRED HERBERT DODGE

A.B. (Yale)  
*Instructor in Physical Training*  
*Director of the Ballantine Gymnasium*

116 Hamilton Street

FACULTY.

CLARENCE WARD

A.B., A.M., (Princeton)  
*Assistant Professor of the History of Art*

39 Lincoln Avenue

FRANK RANDALL PRATT

B.Sc., M.Sc. (Rutgers)  
*Assistant Professor of Physics*

4 Union Street

FREDERICK CHARLES MINKLER

B.S. (Iowa State Coll.)  
*Assistant Professor of Animal Husbandry*

Nichol Avenue

ALBERT RITTENHOUSE JOHNSON

B.Sc. (Rutgers)  
*Assistant Professor of Mathematics*

121 Codwise Avenue

WILLIAM BERTRAM TWISS

A.B. (Dartmouth); A.M. (Harvard)  
*Assistant Professor of English*

6 Grant Avenue

## Other Instructors, Officers and Assistants.

GEORGE AUGUSTUS OSBORN

B.Sc. (Rutgers)  
*Librarian*

15 Grant Avenue

JOHN HOWARD RAVEN

A.B., A.M., D.D. (Rutgers)  
*Instructor in Hebrew*  
*Lecturer on the English Bible*

185 College Avenue

HENRY BARNARD KÜMMEL

A.B. (Beloit); A.M. (Harvard); Ph. D. (Chicago)  
*State Geologist of New Jersey*  
*Lecturer on the Geology of New Jersey*

Trenton

STUART AUGUSTUS STEPHENSON, JR.

B.S., C. E. (New York Univ.)  
*Instructor in Graphics*

266 Redmond Street

ELDON LEON LOBLEIN

D.V.S. (Univ. Penn.)  
*Lecturer in Veterinary Science*

172 Somerst Street

FREDERICK FRELINGHUYSEN COUCH

M.E. (Lehigh)  
*Instructor in Mechanical Engineering*  
Alumni and Faculty House

EDWARD FRANKLIN HAUCH

B.A. (Toronto); M.A. (Columbia)  
*Instructor in Modern Languages*

196 Somerset Street

HARRY REYNOLDS LEWIS

B.Sc. (R. I. State Coll.)  
*Instructor in Dairy Husbandry*

69 Paterson Street

FLOYD EARLE CHIDESTER

Ph.B. (Syracuse); A.M., Ph.D. (Clark Univ.)  
*Instructor in Biology*

70 Lawrence Avenue

CHARLES HALE

*Instructor in English*

Alumni and Faculty House

FRANK WILSON LINDSLEY

A.B. (Columbia); L.H.M. (New York Univ.)

*Instructor in Mathematics*

Hertzog Hall

EARLE COOK STILLWELL

B.Sc. (Rutgers)

*Instructor in Horticulture*

College Farm

JOHN PUTNAM HELYAR

B.S., M.S. (Univ. Vt.)

*Instructor in Botany*

120 Hamilton Street

HARRY NELSON LENDALL

B.S. in C.E. (Tufts)

*Instructor in Mathematics*

The Bayard

LUTHER HARNED MARTIN

*Assistant Registrar*

Metuchen

GEORGE WINFIELD NUTTMAN

B.Sc., M.Sc. (Rutgers)

*Assistant in the Library*

Alumni and Faculty House

MARION CUSHMAN

*Assistant in the Library*

Raritan Avenue

MARY GILLESPIE

A.B. (Mt. Holyoke)

*Assistant in the Library*

2 Richardson Street

CATHERINE L. DAVIDSON

*Secretary to the President*

Seminary Place

WILLIAM SEYMOUR VALIANT

*Assistant in the Geological Museum*

132 New Street

EARL EDWARD VANDERWERKER

B.Sc. (Rutgers)

*Office Assistant*

Seminary Place



LUTHER EDWARD RIDDLE, JR.

*Office Assistant*

Metuchen

JOHN VAIL BISSETT

B.Sc. (Rutgers)  
*Assistant in Chemistry*

420 George Street

GEORGE HOWARD BALDWIN

B.Sc. (Rutgers)  
*Assistant in Ceramics*

Winants Hall

HOWARD MATTHEW GARGAN

B.S. (Fordham)  
*Assistant in Physical Training*

52 College Avenue

# The Kellogg Lecturers.

This lectureship was founded by Luther Laflin Kellogg, LL.D., of the class of 1870.

## *Lecturers 1908-1909.*

C. RAYMOND BEAZLEY, M.A., D.Litt.  
Fellow of Merton College, Oxford University  
University Lecturer in the History of Geography

EUGENE KÜHNEMANN, Ph.D.  
Professor of Philosophy, University of Breslau  
Visiting Professor of German Literature, Harvard University

HON. GEORGE B. MCCLELLAN, LL.D.  
Mayor of New York City

## *Lecturers 1909-1910*

BARON DAIROKU KIKUCHI, LL.D.  
President of the Imperial University of Kyoto, Japan

CHARLES W. ELIOT, LL.D.  
President Emeritus of Harvard University

## *Lecturers 1910-1911.*

HON. ANDREW S. DRAPER, LL.D.  
Commissioner of Education of the State of New York

BLISS PERRY, L.H.D., LL.D.  
Professor of English Literature, Harvard University

## *Lecturers 1911-1912.*

HON. JAMES BRYCE, D.C.L., LL.D.  
Ambassador of Great Britain to the United States

EDWIN A. ALDERMAN, D.C.L., LL.D.  
President of the University of Virginia

HENRY VAN DYKE, D.D., LL.D.  
Professor of English Literature, Princeton University

# Report of the State Board of Visitors.

---

*To His Excellency, Woodrow Wilson, Governor of the State of New Jersey:*

SIR—The Board of Visitors to the State Agricultural College herewith present their forty-eighth annual report upon the present condition and courses of instruction at that institution, as required by the act creating the Board, entitled, "An act appropriating scrip for the public lands granted to the State of New Jersey by the Act of Congress approved July second, one thousand eight hundred and sixty-two," and approved April 4th, 1864.

The members of the Board made an annual examination of the students pursuing the regular and special courses of instruction on the 19th day of December, 1911. They also visited the laboratories, the draughting rooms, the military drill hall, the collections of the institution and the farm provided for the State Agricultural College by the Trustees of Rutgers College. They also examined the preparations made for the classes in the Short Courses in Agriculture.

The Board adopted a resolution expressing its full satisfaction with the courses and facilities of instruction offered by the Trustees of Rutgers College, of the continued devotion of the professors and instructors in their various lines of class and laboratory instruction, and of the proficiency of the students in their various branches of study.

During the year the membership of the Faculty has been 52, and all but four of this number have given instruction in the Scientific School.

The enrollment of students for the year was 672; graduate students, 4; seniors, 66; juniors, 74; sophomores, 92; freshmen, 144; special students, not candidates for a degree, 130, and preparatory school pupils, 162. The degree of Bachelor of Science was conferred upon 43 graduates in June, 1912. Of these graduates, 7 had pursued the Course in Agriculture, 2 the Course in Biology, 8 the Course in Chemistry, 3 the Course in Ceramics, 13 the Course in Civil Engineering, 2 the Course in Electrical Engineering, 6 the Course in Mechanical Engineering, and 2 the Course

## REPORT OF THE STATE BOARD OF VISITORS.

in General Science. The degree of Bachelor of Arts was conferred upon 11 candidates and the degree of Bachelor of Letters upon 11 candidates at the same time.

Beginning with the Class of 1913 in September, 1912, the Seniors pursuing the Four-Year Course in Agriculture will be allowed a wide latitude in the choice of elective subjects.

The State of New Jersey has made the following Special appropriations:

For Short Course Building Repairs and Improvements....	\$2,000
For College Farm Roads and Grading.....	3,000
For Farm Buildings for Dairy Husbandry.....	12,000
For Erection of an Agricultural Building.....	100,000

The following is a list of the members of the graduating class of 1912, with the subject of each graduate's thesis:

### GRADUATION THESES—CLASS OF 1912.

JAMES K. ALVERSON, East Orange, N. J.	American Playgrounds
HAROLD CURTICE AMOS, Rochester, N. Y.	Eugenics, The Solution of Certain Public Problems
JOHN ARTHUR, Newark, N. J.	High Pressure Water Systems
GEORGE DAVID AUCHTER, Jersey City, N. J.	The Pennsylvania Railroad Company's Stone Arch Bridge over the Raritan River at New Brunswick, New Jersey
PERRY-HADWICK BASCOM, Middlebush, N. J.	The Blue Limestones of New Jersey
JOHN VAIL BISSETT, New Brunswick, N. J.	Aniline
EDWARD FRANCIS BLATZ, Elizabeth, N. J.	The Triphenylmethane Dyestuffs
WALTER SAX BLOOM, Catskill, N. Y.	Use of the Optative and Subjunctive Moods in New Testament Greek
WALTER COX BOWEN, Shiloh, N. J.	The Sewerage System and Sewage Disposal Works of Easton, Md.
FRED ARTHUR BRIEGS, Perth Amboy, N. J.	Vocal and Instrumental Music in Public Schools
LEONARD STOTT BRIGGS, Firthcliffe, N. Y.	Colored Glazes for Terra Cotta
HAROLD JASPER CADMUS, Ridgewood, N. J.	A Study of Certain Gums
ALAN DITCHFIELD CAMPBELL, New Brunswick, N. J.	The Technique of a College Man's Life
ROBERT STEPHEN CLEAVER, Schuylerville, N. Y.	The Quarantine Service of the State of New York
HENRY CLIFTON COOPER, Collingswood, N. J.	Colored Underslips

## REPORT OF THE STATE BOARD OF VISITORS.

- ELBRON FISHER, New Brunswick, N. J.  
Design of Heating and Lighting Plant for Rutgers College
- FRANCIS CLYDE FITTING, Philadelphia, Pa.  
Farm Laborers in the United States
- SAMUEL FURMAN FOSTER, Bayhead, N. J.  
Future Sources of Nitrogenous Fertilizers
- FRED MONTGOMERY FOUNTAIN, Hackensack, N. J.  
Bismarck's Policy in the Franco-Prussian War of 1870-71
- RUSSELL WOODWORTH GIES, Newark, N. J.  
Bird Migrations
- SEYMOUR PARKER GILBERT, JR., Bloomfield, N. J.  
Has a State Power to Rescind Its Ratification of a Proposed Amendment, before such Amendment shall Have been Incorporated in the Constitution of the United States?
- AUGUSTUS LEMUEL GLADDING, Lincoln, Cal.  
Colored Underslips
- FREDERIC GLANDER, Bloomfield, N. J.  
Heating and Lighting Plant for Rutgers College
- JACOB WALTER GROENDYKE, Monmouth Junction, N. J.  
The Limitation of Royal Power in Germany in the Nineteenth Century
- AARON MARTIN HAGEMAN, Bound Brook, N. J.  
The Action of Thionyl-Chloride on Metals and Metallic Oxides
- GEORGE EDWARD HAGEMAN, Newark, N. J.  
Scientific Shop Management
- ALBERT LEWIS HAGEN, Cranford, N. J.  
The Production and Cost of Certified Milk
- EDWIN HOWE HALSTEAD, New Brunswick, N. J.  
The Relation of Nitrogen to the Agriculturist
- VALENTINE BRITTON HAVENS, New Brunswick, N. J.  
Methods in Debate
- HERBERT WILLIAM HEILMANN, Newark, N. J.  
The Water Supply System of the City of Newark, N. J.
- WILLIAM GETTIER HERRMAN, Plainfield, N. J.  
Heredity in Its Relation to Disease
- HENRY KILMER HOTALING, Glenmont, N. Y.  
The Philosophy of William James
- HENRY VICTOR JACOBSON, Newark, N. J.  
The Parks of Newark, N. J.
- ORAN KELLER, New Brunswick, N. J.  
Salicylic Acid and Derivatives
- RALPH JACOB KIEFFER, Lake Katrine, N. Y.  
Power Requirements of the Pennsylvania's New York Terminal
- ALSON CARLTON LEWELLYN, Moorestown, N. J.  
Power Requirements of the Pennsylvania's New York Terminal
- JOHN FRANCIS MCGOVERN, JR., New Brunswick, N. J.  
Serum Therapy
- JOHN PRESTON MAILLER, Cornwall, N. Y.  
Variable-Speed Power Transmission
- JAMES WALTER MAILLER, Cornwall, N. Y.  
Estimates for Lighting and Heating Plant for Rutgers College
- JOHN OSBORN MARSH, Rahway, N. J.  
The Water Supply of the City of Rahway, New Jersey
- GEORGE WILLARD MARTIN, Metuchen, N. J.  
The Origin and Development of the English Sonnet
- WILLIAM HERBERT MARTIN, Bloomfield, N. J.  
High Vacuum Condensers and Air Pumps

## REPORT OF THE STATE BOARD OF VISITORS.

- LOUIS FOWLER MERRILL, Sergeantsville, N. J.  
The Grange as a Factor in Rural Life.
- JOHN DITTGEN MORRISON, Ridgefield Park, N. J.  
Pragmatism.
- MILO CLAUDE MOSEMAN, Tannersville, N. Y.  
The Scope of the Phrase "From Whatever Source Derived" in the  
Amendment Now Pending for Adoption by the States.
- ALFRED ARTHUR NELSON, South Amboy, N. J.  
Buccleuch Park
- JOHN RICHARD NEVIUS, New Brunswick, N. J.  
Buccleuch Park
- HERBERT RAMSEY PEEBLES, Paterson, N. J.  
Gravity Filter Plant for Rutgers College, New Brunswick, N. J.
- JACOB PRESS, Harrison, N. J.  
Examination of the Meaning and Content of the Word "Education"
- DONALD ROSS, Newark, N. J.  
A Few Essential Oils
- VIVIAN CLINTON ROSS, New Brunswick, N. J.  
Trial by Jury, with Reference to its Beginnings
- ROBERT SCHMIDT, Yorktown, Va.  
Peach Production in New Jersey
- EDWARD COLLIER SCOTT, Oswego, N. Y.  
The Analysis and Identification of Paint Oils
- ERNEST WELD SCUDDER, Atoka, Okla.  
The Psychology of Advertising
- RICHARD ALEXANDER SMITH, New Brunswick, N. J.  
The National Workshops Experiment in France under the Provisional  
Government
- STEPHEN PARSONS SMITH, Leesburg, N. J.  
Present and Proposed New Jersey Canals
- WILLIAM EMMONS SMOCK, Newark, N. J.  
A Proposed System of Sewerage for Milltown, N. J.
- WM. RUDOLPH FUERCHTEGOTT STIER, Sayreville, N. J.  
Psychology of Interest
- HAROLD MOREOCK TERRILL, Rahway, N. J.  
Esters and Amides
- ARTHUR BENTLEY TITSWORTH, Plainfield, N. J.  
Types of Internal Combustion Motors
- EARLE EDWARD VAN DERWERKER, Schuylerville, N. Y.  
The Sanitary Aspects of Tuberculosis
- ELMER LEIGH WALKER, Newark, N. J.  
A Sewerage System for Milltown, N. J.
- DEXTER WHITE, New York, N. Y.  
Suffrage in the Different States
- LEROY COLVER WILSEY, Newark, N. J.  
The Rise of Homeopathy
- FREDERICK WOELFLE, Brooklyn, N. Y.  
The Types and Requirements of the New York City Egg Market



# REPORT OF THE STATE BOARD OF VISITORS.

## APPOINTEES TO STATE SCHOLARSHIPS UNDER ACT OF 1864.

<i>Counties.</i>	<i>No. Sch.</i>	<i>Appointees.</i>	<i>Class.</i>	<i>Residence.</i>
Atlantic .....	1	Stanley U. North.....	1915	Atlantic.
Bergen .....	1	William C. Ball .....	1913	Bergen.
Burlington .....	1	Joseph R. French.....	1915	Burlington.
	2	Robert F. E. Stier .....	1915	Middlesex.
	3	Laurence W. Schenck .....	1916	Atlantic.
Camden .....	1	E. Tiel Smith .....	1913	Camden.
	2			
Cape May.....	1	Marvin Leeds .....	1915	Atlantic.
Cumberland ....	1	James L. Handford .....	1915	Cumberland.
Essex .....	1	R. Parkhurst Dickerson .....	1914	Essex.
	2	Louis B. Gittleman .....	1916	Essex.
	3	Toby Furst .....	1916	Essex.
	4	Eugene F. Rockafeller .....	1916	Monmouth.
	5	Raymond Strohl .....	1916	Union.
	6			
Gloucester ....	1	Donald B. Atchley .....	1916	Monmouth.
Hudson .....	1	Albert E. Mercker .....	1915	Hudson.
	2	John C. Green, Jr.....	1915	Warren.
	3	Donald L. Havens .....	1913	Middlesex.
	4	Frank E. Field .....	1913	Somerset.
	5	Herbert F. Haley .....	1916	Union.
	6			
Hunterdon ....	1	H. Milton Allen .....	1914	Hunterdon.
Mercer .....	1	Francis E. Weis .....	1913	Mercer.
	2	George M. Bechtel .....	1914	Mercer.
Middlesex ....	1	Carl F. N. Hegstrom.....	1913	Middlesex.
	2	Oren F. Browning, Jr.....	1914	Middlesex.
Monmouth .....	1	Robert E. McMichael.....	1916	Monmouth.
	2	Robert P. Hulsart .....	1916	Monmouth.
Morris .....	1	Louis W. Martin .....	1915	Middlesex.
	2	Herbert C. Segur .....	1916	Monmouth.
Ocean .....	1	Ralph G. Seiler .....	1916	Union.
Passaic .....	1	Harry B. Smith .....	1915	Somerset.
	2	George H. Buck .....	1916	Union.
Salem .....	1	Eugene R. Taylor .....	1916	Salem.
Somerset .....	1	Claremont W. Masker .....	1913	Somerset.
Sussex .....	1	Obadiah P. Armstrong .....	1916	Sussex.
Union .....	1	William H. McCallum .....	1914	Union.
	2	Edward P. Smaney .....	1916	Union.
Warren .....	1	George R. Merrill .....	1913	Warren

## APPOINTEES TO ASSEMBLY DISTRICT SCHOLARSHIPS UNDER ACT OF 1890.

<i>Name.</i>	<i>County.</i>	<i>Class.</i>
Walter Bastedo .....	Hudson .....	1913
Walter C. Bauer .....	Union .....	1913
Whitfield J. Bell .....	Hudson .....	1913
Arthur D. Bergen.....	Morris .....	1913

# REPORT OF THE STATE BOARD OF VISITORS.

<i>Name.</i>	<i>County.</i>	<i>Class.</i>
E. Dudley Chase .....	Essex .....	1913
Jacob Chob-Richer .....	Essex .....	1913
Charles H. Connors.....	Middlesex .....	1913
Frank H. Conover.....	Hudson .....	1913
Lester E. Cook.....	Essex .....	1913
Ralph E. Cooper .....	Essex .....	1913
Louis M. Davis.....	Somerset .....	1913
Clifford E. Dennis .....	Sussex .....	1913
F. Walker Flanagan .....	Morris .....	1913
Joseph K. Folsom.....	Essex .....	1913
Elmer S. Grymes.....	Passaic .....	1913
Cuthbert W. Haasis .....	Hudson .....	1913
Paul W. Haasis .....	Hudson .....	1913
J. Parker Hickman, Jr.....	Monmouth .....	1913
Walter Hornbruch .....	Essex .....	1913
Raymond D. Howell.....	Hudson .....	1913
Frederick J. Johnson.....	Ocean .....	1913
August Leistner .....	Hudson .....	1913
Weston Lennox .....	Sussex .....	1913
Jesse B. Leslie.....	Essex .....	1913
Oliver F. Mitchell.....	Hunterdon .....	1913
T. Vassar Morton.....	Essex .....	1913
Herman A. Newmark.....	Hudson .....	1913
Lawrence H. Opdycke.....	Hudson .....	1913
G. Stanley Robins.....	Bergen .....	1913
G. Raymond Robinson .....	Burlington .....	1913
Morris Schechter .....	Essex .....	1913
Cornelius F. Schenck .....	Passaic .....	1913
Harold W. Schenck .....	Passaic .....	1913
Samuel M. Sharkey .....	Mercer .....	1913
Earl R. Silvers.....	Union .....	1913
T. Darmon Smith .....	Camden .....	1913
Charles C. Stover.....	Mercer .....	1913
Charles A. Titus.....	Morris .....	1913
Frederick N. Van Deripe.....	Middlesex .....	1913
Henry L. Van Mater.....	Essex .....	1913
Paul Walrath .....	Essex .....	1913
Adolph H. Baumann .....	Hudson .....	1914
Oren F. Browning, Jr.....	Middlesex .....	1914
Lindley G. Cook.....	Morris .....	1914
Samuel C. Cooper .....	Bergen .....	1914
Edward J. Crane .....	Hudson .....	1914
Robert G. Dooling.....	Gloucester .....	1914
John T. Finegan .....	Essex .....	1914
Alfred A. Gaipa.....	Hudson .....	1914
Charles H. Gant.....	Monmouth .....	1914
Samuel I. Hoddeson.....	Middlesex .....	1914
Howard F. Huber .....	Middlesex .....	1914
William T. Hulsizer .....	Hunterdon .....	1914
John Lowery, Jr.....	Essex .....	1914
Reginald P. Lukens.....	Union .....	1914
Eric W. Luster.....	Bergen .....	1914
Bryce I. MacDonald.....	Essex .....	1914
George R. Maxson.....	Hudson .....	1914
Louis R. Menagh, Jr.....	Hudson .....	1914

# REPORT OF THE STATE BOARD OF VISITORS.

<i>Name.</i>	<i>County.</i>	<i>Class.</i>
Arthur C. Metcalf.....	Passaic	1914
James Morrow .....	Cumberland	1914
Edward T. Paxton .....	Monmouth	1914
Arthur A. Prentiss .....	Hudson	1914
Thomas U. Purrington .....	Mercer	1914
Edward R. Schmid .....	Essex	1914
George W. Schmidt .....	Hudson	1914
Herbert Simon .....	Essex	1914
Harold Solomon .....	Camden	1914
J. Archer Stackhouse.....	Atlantic	1914
William W. Summerill .....	Salem	1914
Theodorus M. Thorburn.....	Passaic	1914
Frank L. Walton.....	Union	1914
Joseph A. Ward.....	Ocean	1914
Louis K. Wilkins.....	Hunterdon	1914
Stanley N. Williams .....	Passaic	1914
Carl R. Woodward .....	Monmouth	1914
Frederick C. Brush.....	Cumberland	1915
William H. Campbell, Jr.....	Cape May	1915
Murray A. Chittick.....	Hudson	1915
Charles B. Conover.....	Hudson	1915
Horace V. Cory.....	Essex	1915
DuPlessis H. Crowe.....	Bergen	1915
Douglas Cummings .....	Essex	1915
Spencer D. Embree .....	Passaic	1915
Charles H. Engelhard.....	Sussex	1915
Russell Fleming .....	Hudson	1915
Joseph Friedman .....	Middlesex	1915
Benjamin A. Furman .....	Essex	1915
Lawrence G. Gillam .....	Burlington	1915
Louis N. Grier .....	Gloucester	1915
Mahlon L. Harker.....	Essex	1915
Harold T. Hoot.....	Essex	1915
Ralph M. Hubbard.....	Bergen	1915
Russell W. Hunt.....	Mercer	1915
Alvin R. Jacobsen.....	Middlesex	1195
Joseph Kerr .....	Mercer	1915
Emerich J. Kuhn.....	Essex	1915
Arthur Kuntz .....	Essex	1915
Herman J. Levine.....	Hudson	1915
Lloyd N. Lewis .....	Morris	1915
W. Durward McCloskey.....	Ocean	1915
Samuel Mandel .....	Essex	1915
C. Raymond Martin.....	Essex	1915
Lester D. Murray.....	Hudson	1915
George D. Norcom.....	Cape May	1915
Bernard Pear .....	Hudson	1915
William S. Porte .....	Hudson	1915
Roy M. D. Richardson.....	Middlesex	1915
Leo Rogin .....	Hudson	1915
Ime M. Rose.....	Somerset	1915
Samuel L. Sahn .....	Atlantic	1915
Russell J. Savitz .....	Passaic	1915
Albert M. Schultz.....	Hudson	1915
Alfred F. W. Sfarra.....	Passaic	1915

# REPORT OF THE STATE BOARD OF VISITORS.

<i>Name.</i>	<i>County.</i>	<i>Class.</i>
Samuel Silbert .....	Union .....	1915
William H. Stang .....	Camden .....	1915
Irving B. Stanton .....	Hudson .....	1915
Elroy W. Steedle .....	Burlington .....	1915
Theodore G. Sullivan, Jr. ....	Camden .....	1915
Ralph W. Thompson .....	Passaic .....	1915
Wainwright D. Twing .....	Burlington .....	1915
Harold W. Van Liew .....	Camden .....	1914
Selman A. Waksman .....	Warren .....	1915
Aaron Wallace .....	Union .....	1915
Allen G. Waller .....	Monmouth .....	1915
Ronson J. Warne .....	Camden .....	1915
A. Dudley Watson .....	Cumberland .....	1915
Harry E. Watt .....	Sussex .....	1915
Edward Whyman .....	Union .....	1915
William P. E. Ainsworth .....	Burlington .....	1916
Raymond M. Austin .....	Union .....	1916
James M. Coleman .....	Monmouth .....	1916
Clifford J. Colville .....	Hudson .....	1916
Max Drill .....	Essex .....	1916
Edwin Florance .....	Middlesex .....	1916
Adrain Fisher .....	Essex .....	1916
Karl F. Haenichen .....	Passaic .....	1916
Ralston R. Hannas .....	Hudson .....	1916
Charles Hruby .....	Union .....	1916
J. Henry Huntington, 3rd .....	Essex .....	1916
William T. Hutchinson .....	Monmouth .....	1916
Edward S. Ingham .....	Middlesex .....	1916
Dean C. Jenkins .....	Morris .....	1916
Harris T. Kille .....	Gloucester .....	1916
Albert Kreh .....	Camden .....	1916
Walter F. Kroemmelbein .....	Burlington .....	1916
Linwood L. Lee .....	Mercer .....	1916
Arthur R. Lewis .....	Essex .....	1916
Adrian C. Lincoln .....	Hudson .....	1916
Clifford A. McLaughlin .....	Essex .....	1916
Harvey Mann .....	Hudson .....	1916
Robert V. Martin .....	Hudson .....	1916
Julian F. Miller .....	Camden .....	1916
Adrian C. Minton .....	Sussex .....	1916
Edward L. Molineux, Jr. ....	Hudson .....	1916
John Monteith .....	Morris .....	1916
Edward L. Poppel .....	Essex .....	1916
Joseph Ratner .....	Hudson .....	1916
Charles H. Reed .....	Hudson .....	1916
Walter D. Reese .....	Morris .....	1916
George B. Roesch .....	Essex .....	1916
Theodore Rosen .....	Cumberland .....	1916
James B. Scarr .....	Bergen .....	1916
Robert L. Scharring-Hausen .....	Essex .....	1916
Ellis H. Schoonmaker .....	Bergen .....	1916
Herbert W. Seidman .....	Hudson .....	1916
Laurence W. Sharp .....	Cape May .....	1916
Harry Sloane .....	Hudson .....	1916
William S. Sprague .....	Ocean .....	1916

# REPORT OF THE STATE BOARD OF VISITORS.

<i>Name.</i>	<i>County.</i>	<i>Class.</i>
L. Jerome Taylor.....	Monmouth .....	1916
Benjamin E. Thomas.....	Somerset .....	1916
Frederick J. Ulrich.....	Passaic .....	1916
John S. Voorhees.....	Mercer .....	1916
Albert Watman .....	Hudson .....	1916
William C. Wells, Jr.....	Mercer .....	1916
Hugo O. Wendel .....	Union .....	1916
Otto E. Wiemer .....	Camden .....	1916
Earl S. Willever.....	Warren .....	1916
Frederick W. Wolff .....	Passaic .....	1916
Walter K. Wood.....	Passaic .....	1916

All of which is respectfully submitted.

D. DEMAREST DENISE,  
*President of the Board of Visitors.*



# Report of the Board of Trustees.

*To His Excellency, Woodrow Wilson, Governor of the State of New Jersey:*

SIR—In compliance with the Act of Congress, approved July 2nd, 1862, and the Act of the Legislature of New Jersey, approved April 4, 1864, I beg leave to submit, on behalf of the Trustees of Rutgers College the forty-seventh annual report of Rutgers Scientific School.

The Faculty which sustained so serious a loss a year ago in the death of Professor Edward B. Voorhees, D. Sc., has met like loss again this year in the death of Professor John Bernhard Smith, D. Sc. Dr. Smith was born in New York City, November 21st, 1858. He studied law and was admitted to the bar in 1879. His intense interest and great ability in scientific study soon turned him into a different definite life-work. In 1884 he became special agent of the Entomology Division of the United States Department of Agriculture and a little later he was appointed Assistant Curator of the United States Natural History Museum. In 1889 he became Professor of Entomology at Rutgers and for the twenty-three years until his death served the College with great devotion and efficiency, bringing to it the great honor which came increasingly to him at home and abroad as a foremost man in his field of science. He was author of many books, incessant contributor to periodicals, an expert investigator, and an untiring worker in the application of science to the common welfare. A special work in which he was notably successful and with which his name is especially associated was that of mosquito extermination in the State of New Jersey by methods now adopted far beyond the State. He was member of numerous scientific societies; in 1910 he was president of the Entomological Society. He gave devoted, active and efficient service to the general life of Rutgers and to its student interests. He received the degree of D.Sc. from the College in 1891. He died at New Brunswick after a long illness March 12th, 1912.



## REPORT OF THE BOARD OF TRUSTEES.

The Faculty loses by resignation Professor Myron T. Scudder, A. M., who has been for four years Professor of the Science of Teaching. During the first three years of the period he was Head Master of the Preparatory School; during the last year he has been Principal of the Scudder Collegiate School in New York City. The interests of the School now in his charge demand his entire attention and compel his request for release from the professorship at Rutgers. Several Instructors and Assistants have also retired from the corps of instruction with the close of the College year: Erik Schjoth Palmer, Ph.B., Instructor in Mathematics; William Dana Hoyt, Ph.D., Instructor in Botany; James Claude Thomson, B.Sc., Assistant in Chemistry, and Ralph Heidingsfeld, B.Sc., Assistant in Ceramics.

The following appointments fully announced in the last statement became effective July 1st, 1911: Maurice Adin Blake, B.S., Associate Professor of Horticulture; Frederick Frelinghuysen Couch, M.E., Instructor in Mechanical Engineering; Edward Franklin Hauch, M.A., Instructor in Modern Languages; Floyd Earl Chidester, Ph.D., Instructor in Biology; Harry Reynolds Lewis, B.Sc., Instructor in Dairy Husbandry; Charles Hale, Assistant, later Instructor, in English; James Claude Thomson, B.Sc., Assistant in Chemistry, and Ralph Heidingsfeld, B.Sc., Assistant in Ceramics.

New appointments, to take effect July 1st, or not later than October 1st, 1912, are arranged as follows:

Melville Thurston Cook, Ph.D., Professor of Plant Pathology. Mr. Cook was graduated from Stanford University in 1894 with the degree of Bachelor of Arts, and received the degree of Master of Arts from DePauw University in 1901, and the degree of Doctor of Philosophy from Ohio State University in 1904. In 1894-5 he was Principal of the High School at Vandalia, Illinois. From 1895 to 1897 he was instructor in Biology and from 1897 to 1904 Professor of Biology at DePauw University. From 1904 to 1907 he was Plant Pathologist at the Experiment Station, Santiago, Cuba. Since 1907 he has been Plant Pathologist at the State Experiment Station of Delaware. He is a member of many scientific societies and a writer of many articles on subjects in his department.

## REPORT OF THE BOARD OF TRUSTEES.

Alexander James Inglis, Ph.D., Professor of the Science of Teaching. Dr. Inglis was graduated from Wesleyan University in 1902 with the degree of Bachelor of Arts and with honors. After a year's teaching at the Kisikminetas School, Pennsylvania, he became associated with the Horace Mann School, Columbia University, and taught there from 1903 to 1911, serving as Acting Principal during the last year. He pursued graduate study at Columbia University, and received the degree of A. M. in 1909, and of Ph.D. in 1911. During the year 1911-12, he has been Associate Principal of the Belmont School, California. He is the author of several text books, has had very successful experience in teaching and administration, and has shown great ability and promise in the studies appropriate to the professorship to which he is now called.

Thomas J. Headlee, Ph.D., Professor of Entomology. Dr. Headlee was graduated from the University of Indiana in 1903 with the degree of Bachelor of Arts and received the degree of Master of Arts from the same University in 1904. He received the degree of Doctor of Philosophy from Cornell University in 1906. He was Assistant Entomologist at the New Hampshire Experiment Station in 1906 and Associate in 1907. Since 1907 he has been Professor of Entomology and Zoology at the Kansas State College and Entomologist and Zoologist of the Kansas State Experiment Station. He is a constant contributor to the literature of his subject.

Earl Cook Stillwell, B.Sc., Instructor in Horticulture. Mr. Stillwell was graduated from Rutgers College in 1911. During the year 1911-12 he has been engaged in farm management.

John Putnam Helyar, M.S., Instructor in Botany. Mr. Helyar was graduated from the University of Vermont in 1909 with the degree of Bachelor of Science. Since 1909 he has been instructor in Botany at the University of Vermont and he received the degree of Master of Science from that University in 1912.

Harry Nelson Lendall, B.S., Instructor in Mathematics. Mr. Lendall was graduated from Tufts College in 1906. For more than three years he was engaged in practical engineering. Since 1909 he has been Instructor in Mathematics and Graphics at the University of Pennsylvania.

John Vail Bissett, B.Sc., Assistant in Chemistry. Mr. Bissett was graduated from Rutgers College in 1912.

## REPORT OF THE BOARD OF TRUSTEES.

George Howard Baldwin, B.Sc., Assistant in Ceramics. Mr. Baldwin was graduated from Rutgers College in 1911. During the year 1911-12 he held a Fellowship in Ceramics at the University of Illinois.

The following changes of title are announced:

Charles Huntington Whitman, Ph.D., Associate Professor, has been made Professor of English.

Edward Livingston Barbour, B.O., Instructor, has been made Professor of the Art of Public Speaking.

Fellowship assignments for the year 1912-13 are made as follows: a Vander Poel Fellowship in Science to George Edward Hageman, B.Sc., graduate of the Class of 1912; a Vander Poel Fellowship in Science to Edward Collier Scott, B.Sc., graduate of the Class of 1912. The first thesis under the terms of the John Oliver Herbert Memorial Fellowship in Political Science has been presented and printed by John DeLancy Ferguson, A.B., graduate of the Class of 1911, and holder of the Fellowship for the past year. The title of the thesis is "The Relations of the State to Religion in New York and New Jersey During the Colonial Period," and its publication is the beginning of what must become an increasing product of graduate study at Rutgers put forth in permanent form.

The plan with rules governing work for graduate degrees has been substantially revised by the trustees on the recommendation of the Faculty. A principle has been adopted and a standard set which seem appropriately exact and high. Although the revision is in the line of much comment and argument in the educational world favorable to a new and enduring dignity for the Master's degree, Rutgers is one of the first, perhaps almost the very first, to take this positive action. The committee's report which was adopted is as follows concerning this degree:

Two principles stand foremost: first, the Master's degree should be given a distinct and definite place among academic honors; secondly, this degree should be held in the esteem due a higher degree.

Those colleges and universities which grant it to graduate students only after at least one year's residence have thereby tried to restore it to honor; but they have failed to give it a distinct

place, for it is usually merely a preliminary step towards the Doctor's degree, to be forgotten if that degree is won, or to be a consolation to those who fail. In short, the course of study, the method of study, and the aim of the student, all make it a Doctor's degree of an inferior type; and as such it is often a reproach to the student in later years if it remains his final higher degree. On the other hand, those universities and colleges which grant it in absentia or after the completion of courses in medicine, law, or divinity are either making it still less honorable or are making it a second degree for precisely the same work and both superfluous and meaningless. This is felt so generally today among able and right minded students that few are willing to seek the degree under these later conditions.

To the small college belongs especially, we believe, the task of rehabilitating this degree. Few small colleges are in a position to give adequate course and facilities of research to candidates for the Doctor's degree and it is often their duty to urge such students to go elsewhere; whereas, in the case of the Master's degree, provided this degree can be properly rehabilitated, the small college may be able to offer excellent opportunities to the student, to do so without great cost to the treasury of the College and to compete successfully with the larger universities.

Finally, it is the belief of your Committee that there are an increasing number of men and women graduating from our colleges who are not fitted or who do not wish to devote themselves to the longer and profounder study and original research required for the Doctor's degree, but who do desire to pursue further their college studies in some chosen direction and who might do so with great profit to themselves and to the community; especially is this true of those young men and women who intend to teach in the elementary and secondary schools and of those students who are about to enter our theological seminaries. Moreover, it is our belief that a few men in each year's graduating class at Rutgers belong to this group and should be encouraged to study at Rutgers for the higher degree. We have already three Fellowships for whose administration we are responsible and we should no doubt be glad to receive further endowments of this sort.



## REPORT OF THE BOARD OF TRUSTEES.

Hence it seems to us both fitting and progressive that Rutgers College should seek to solve for itself at least this rather puzzling academic problem.

We recommend: First, that the Master's degree be regarded by the Faculty of Rutgers College as a degree to be given after extended liberal study and not, as in the case of the Doctor's degree, after intense application to one subject and to original research;

Secondly, that the studies pursued by the candidate for this degree constitute a distinct course by themselves as they would if he were studying law or divinity;

Thirdly, that this course consist of three subjects, to be pursued by the student for two years in residence at the College; but equivalent graduate courses begun at other institutions may be substituted for the work of the first year;

Fourthly, that the character of such studies should not differ essentially from that of the elective courses now widely offered to seniors in our colleges, in other words, that their character should be elementary and liberal;

Fifthly, that no student graduating from Rutgers College after 1912 be granted the Master's degree on the basis of the present requirements.

The committee's report which was adopted is as follows concerning the Doctor's degree:

The trustees have not yet established a separate school for graduates, but several of the departments of the College are provided with facilities and with a teaching force adequate to the demands of a limited number of graduates who may desire to pursue courses of study and research leading to the degree of Doctor of Philosophy (Ph.D.)

For enrollment as a candidate for this degree, it is required that the applicant present a diploma of graduation from Rutgers College or from a college whose diploma shall have been accepted by the Faculty of Rutgers as entitling the applicant to such enrollment. The applicant must further satisfy the heads of the departments of French and German in Rutgers College that he has a reading knowledge of these languages. Enrollment is granted by a vote of the Faculty only when the application is accompanied by a statement from the head of the department in which the

## REPORT OF THE BOARD OF TRUSTEES.

applicant proposes to do his principal work, certifying the readiness of the department to receive him as a candidate for the degree of Doctor.

Students thus accepted as candidates will be recommended for the Doctor's degree on the fulfillment of the following requirements:

1. While no determinate period will in any case be assigned for the attainment of the Doctor's degree, all candidates are required to spend at least three years in the pursuit of an accepted course of study. This work is to be done in residence at Rutgers, but equivalent graduate courses begun at other institutions may be substituted for all but the work of the final year.

2. The accepted course shall include a principal subject and either one or two secondary subjects. The principal subject must be of such a character as to engage the creative and constructive powers of the candidate.

3. The secondary subject or subjects must be chosen in a department other than that of the principal subject, but the head of the department in which the candidate takes his principal subject will advise in regard to the choice of the secondary work, which must have such relation to the principal subject as shall more or less immediately contribute to the value of the principal work.

4. An examination, which shall satisfy those having direction of the candidate's studies and the Faculty, that the candidate is fitted to receive the Doctor's degree.

5. A thesis upon some question connected with the principal subject, which shall be the result of the candidate's original investigation, and an actual contribution to knowledge. This thesis must be submitted to the head of the department in which the principal subject has been pursued, at least four months before the final examination.

Some changes in the under graduate curriculum have also been made creating larger opportunity and efficiency in the courses offered. The prevailing appropriateness and strength of the courses offered and of the instruction given in both cultural and technical lines are shown in no way perhaps more plainly than in the ready entrance of graduates upon post-graduate university



## REPORT OF THE BOARD OF TRUSTEES.

courses elsewhere, or into professional and administrative positions, and their notably successful work in both fields. A significant and important development in the College undertaking is the appointment of a Professor of the Science of Teaching, who, aided by the Professor of the History of Teaching, will give his entire time to the organizing and strengthening of this department. Not many Rutgers graduates, comparatively speaking, have gone into the teaching profession. Some have become very distinguished college and university professors and some have gone into positions of instruction or administration in secondary education, but there is not a wide representation in this field; other professions have made stronger appeal to the students and graduates of Rutgers; and the undergraduate courses have not largely or emphatically suggested preparation for the work. In the last few years when larger privilege in the department has been offered, there has been a distinct increase in the entrance upon education courses; in the coming senior class no less than seventeen men have elected such course. The demand for best possible advantages in this department and for the training of teachers appears, therefore, to the student body itself; it is argued also by the benefit to the College plainly attaching with a larger graduate body in educational work; and it is evident also in the field of usefulness most immediately open in the educational system of New Jersey. The school system of the State is being administered and promoted with view to constantly higher efficiency. There is no teachers' college in the State. Rutgers, in its special aspect as the State College of New Jersey seems to have a definite opportunity and responsibility for the serving of the State's needs by teacher-training, so far as its academic organization permits. It is therefore anticipated that the larger and more aggressive organization of the department of Education at the College will mean not only a growing service for Rutgers students, but as well an even more sympathetic and influential relation with the secondary education of the State than has ever before obtained.

In this connection the occasion for a Summer School at Rutgers and the definite probability of its establishing in 1913 must be mentioned. Its function may naturally be most of all a service

## REPORT OF THE BOARD OF TRUSTEES.

for teachers of the State, and its most immediately demanded department seems to be that of Agriculture. The teaching of agriculture in secondary schools, especially in rural high or grammar schools, is now emphatically urged; Federal and State legislation is likely to recognize and support such work. The Board of Education of the State of New Jersey is manifesting sympathy with it. Teachers for this line of instruction must receive special training for it; and the place for such training is at the State College, where, with the Experiment Station, the large and expert corps of agricultural investigators and instructors is organized. Some students looking toward such work may and will take the 'four years' Bachelor's Course at the College. A far larger number, no doubt, for many years at least, will seek the shorter period of special training for this special item in their varied school work. The Summer School, therefore, is the propriety, and indeed will be a necessity. It is to be earnestly hoped that the Legislature through the State Board of Education or through the College itself will provide the funds for the maintaining of such school at Rutgers from the summer of 1913. Naturally other work than agriculture should be maintained by the school and if the way be financially opened by legislative appropriation or otherwise, six weeks' courses in various subjects, the humanities and the sciences, will be offered, primarily perhaps for New Jersey teachers, but as well for all other qualified students.

The requirements for admission to the technical Bachelor of Science Courses by slight increase become for 1912 and 1913, fourteen points; in 1914 the credits required will become fifteen points, the standard already maintaining for entrance to the Arts, Letters and General Science Courses; from that time, therefore, all Freshmen will enter on equal terms and the Arts, Letters and Science Courses will all stand equally related to the secondary schools. Beginning with this year, 1912, also, no student will be admitted to the Freshman class with more than three conditions; heretofore a slightly greater deficiency has been occasionally allowed, confined, however, to three subjects. Of course a very small proportion of any class have entered or will enter with three points of deficiency; the far larger number have two or one, while a very substantial number of every class enter without any condition whatever. Any and every entrance condition must, by rule

## REPORT OF THE BOARD OF TRUSTEES.

already of some years standing, be removed before the student can pass into the Sophomore year. A still further regulation of academic appropriateness to be fully maintained the coming year and thereafter is that no certificate of studies passed will be received from a candidate who is not a graduate of his secondary school; if the non-graduate of a school is at all qualified to present himself for entrance and desires to do so, he must take the entrance examinations. Possibly this more exacting procedure as to conditions at entrance and as to certificates will make the incoming class slightly smaller than the last, but signs of decreased admissions are not now apparent.

The Freshman class admitted in September, 1912, numbered 138. The Senior class graduated in June, 1912, numbered 65, the largest class ever given degrees at Rutgers. The full registry of students in the four classes for the year, candidates for degree, has been 375. With two Fellows, two special students, and students in the short courses in Agriculture, the total attendance is largely in excess of any past attendance.

A system of Freshman advisers has been established, the class being divided into groups of about ten each, each group assigned to a member of the Faculty. The intention is thus to maintain a close personal relation with each new student with view to advice concerning choice of electives, concerning college work in general, and as well concerning all personal life and welfare so far as the student will welcome such interest and co-operation. The entire student life has been prevailingly excellent; work has been well maintained and the so-called student activities, the literary and athletic activities, have had an unusually successful year. The mature judgment and fine spirit of the students in working out right procedure in all these things with the administration, the Faculty and Committees, are noteworthy, as is the sympathetic and wise service of the Faculty Committee in all this field.

Some items of Alumni relation to the College deserve formal acknowledgement. The cordial spirit widely manifest is a substantial support of the institution, and the activity of the Alumni Associations or Clubs here and there is a distinct promoting of the College welfare. The Graduates Committee has carried the interest on the loans secured by the College for the erection of the

Chemistry Building. Gifts to the Alumni Endowment Fund continue in amounts from \$1,000 down. The number of small annual gifts, \$10 and \$5 each, is very gratifying. During the past year a total of \$4,000 has been added to the Fund, increasing it from \$57,000 to \$61,000. The Alumni and Faculty Club on the Queen's Campus is in its present scope well equipped and its maintenance has become financially successful largely through the constant and wise attention of the Secretary of the Club, George A. Osborn, B.Sc., of the Class of 1897. The collecting of Alumni pictures, class groups, for the walls of the Chapel Lecture Room has been continued with zeal and success by Professor Richard Morris, Class of 1899, of the Faculty Committee on Alumni Relations. The Classes of 1857, 1867, 1868, 1904 and 1912 have been added during the year. The list of groups now upon the walls is as follows: 1860, 1861, 1862, 1864, 1865, 1879, 1881, 1882, 1883, 1884, 1886, 1899, 1900, 1902, 1903, 1905, 1906, 1907, 1856, 1863, 1866, 1877, 1878, 1891, 1901, 1908, 1909, 1910, 1911, 1857, 1867, 1868, 1904, 1912. There is definite expectation of these: 1870, 1875, 1876, 1880, 1889, 1890, 1893, 1896, 1897 and 1898. Those still to be found and secured are 1858, 1859, 1869, 1871, 1872, 1873, 1874, 1885, 1887, 1888, 1892, 1894 and 1895. Two portraits for the Chapel collection have been presented by Alumni, one the portrait of a trustee, the other the portrait of a graduate and trustee, both men of great public distinction and of great devotion to the College, each portrait given by the son of its subject. Judge Garret D. W. Vroom, of the Class of 1862 and trustee, has given a portrait of his father, the Honorable Peter D. Vroom, Governor of New Jersey, 1833-1836, and trustee of Rutgers, 1828-1873. Frederick Frelinghuysen, Esq., of the Class of 1868, and trustee, has given a portrait of his father, the Honorable Frederick T. Frelinghuysen, Senator of the United States and Secretary of State, graduate of the Class of 1836 and trustee of Rutgers, 1851-1885. The interest of Alumni in discovering students for Rutgers and directing them to the College is worthy of mention, an activity that might well be more widely and more vigorously undertaken. A gratifying number of graduates' sons are in the present student body, and the coming year there will be an unusually large number of men to enter their father's Alma Mater. The enthusiasm manifest at the Alumni



## REPORT OF THE BOARD OF TRUSTEES.

Collation on Commencement Day was inspiring and encourages outlook and effort toward even larger gathering of graduates on that annual day. It may be that in connection with the gathering on the campus and at the collation, a larger attendance and larger activity can be secured for the formal Alumni meeting of the day. The custom of gifts by anniversary classes to the College was well sustained this year, somewhat in property advancements but especially in endowment donations. It is now tentatively decided that Commencement week shall be hereafter one week earlier than heretofore, that the Commencement Exercises be held in the morning instead of the evening, and that Commencement Day be Tuesday instead of Wednesday. Final decision will be had at the meeting of the Trustees in October.

The relation of the College to the State of New Jersey under the Federal and State legislation means a peculiar opportunity for academic usefulness and a surely constant growth in the lines of education peculiarly emphasized today: on the one hand the College increasingly feels the greatness and the dignity of the charge committed to it, and on the other hand, the State constantly advances to a clearer conception of its opportunity and a larger fulfilling of its responsibility in this field of the higher education. A common understanding and ready co-operation obtain between officers of the College and officers of the State. Some enactments of the Legislature at its session of 1912 have especially evidenced this. Communication between the College and the secondary schools of the State has become more familiar and can be made still more fruitful for the welfare of each. The joint committees from the Faculty of the College and the teachers of the schools for the preparation of State examination papers is an important item in this advance. At the State competitive examinations in 1911, and now again in 1912, about 200 candidates have appeared for either final or preliminary examinations; in 1911 the full 60 competitive scholarships allowed by the law were won and assigned; this year the full 60 will again be assigned. Beside the usual appropriations paid during the year past, an amount of \$10,000 appropriated by the Legislature of 1911 for the arranging, furnishing and equipping of the Entomology Building and of the Physics Laboratory, has been available. The appropriations made

## REPORT OF THE BOARD OF TRUSTEES.

at the session of 1912 included, beside the interest on the United States Land Grant Fund, \$5,800, and beside the regular items, some special amounts. The Scholarship item is \$2,520, balance for the last academic year, and \$30,000 for the coming year. The item for Department of Clay-Working and Ceramics remains as usual, \$5,000. The item for Short Courses in Agriculture is increased from \$16,500 to \$20,000. The special items are: for repairs and improvements on the Short Course Building, \$2,000; for grounds and roads at the College farm, \$3,000; for dairy buildings, \$12,000; for an Agricultural Building, \$100,000. The dairy buildings provided for will mean a distinct advancement of dairy husbandry instruction in the agricultural course, and of dairy experiment work for the State. The great importance of the Agricultural Building to be erected at a cost of \$100,000 is apparent. It will be built at the farm, and will meet a need long and seriously felt. It will provide lecture rooms and laboratories for the several departments of instruction in agriculture, library room, assembly room large enough for the special farmers' gatherings, facilities for much of the Experiment Station work, and administration rooms worthy of the College, the Station and the State.

The property of the College has been substantially increased during the year. The residence at the College Farm erected by the late Professor Edward B. Voorhees has been purchased from Mrs. Voorhees for \$6,500 and rented to the present Director. The farm of Miss Emma W. Cook and Miss Anne B. Cook and the farm of Miss Mary C. Blew, a total of 132 acres, adjacent to the College Farm, have been bought at a total cost of \$22,100. Of this amount \$7,100 has been paid in cash and \$15,000 by mortgage. The larger area is necessary for the constantly larger work of instruction, experiment and production, and the addition is a very valuable asset to the College, making the entire area now about 275 acres. The dairy buildings will be erected on the addition. The fire which destroyed the College farm buildings July 11th, 1911, though occurring after the close of the last College year, was mentioned in the last annual statement. The loss was about \$24,000; the insurance received was \$22,100. A new barn of finer construction, of modern arrangement and in better location has been erected. The greatest special property item of the



## REPORT OF THE BOARD OF TRUSTEES.

year at the Campus has been the Entomology Building, a brick building owned for some years by the College, and now remodeled for the use of the Department of Entomology at a cost of \$2,000. and arranged, furnished and equipped at a cost of about \$4,600. It meets the purpose well, provides instruction and experiment laboratories and will house the very valuable entomological collections owned by the College. Another special item has been important work at the Ralph Voorhees Library, made possible by a gift of \$2,000 from Mrs. Ralph Voorhees. The work includes proper completing of vestibules, the decorating of interior walls, and more adequate facilities for library work. Other buildings on the Neilson Campus and on the Queen's Campus have received only usual repairs and betterments. An especially valuable addition to equipment has been an Oxy-Acetylene apparatus, valued at \$1,000, presented to the College for the use of the Chemistry and Engineering departments by the Linde Air-Products Company through the interest of the late Dr. S. O. Vander Poel, Class of 1873 and trustee.

The special work for the coming year will be the arranging, furnishing and equipping of the physics laboratory in Geological Hall, for which a balance of about \$5,400 remains available from State appropriation. The first floor of the hall will be entirely changed and made to share the departmental work now maintaining on the two floors above. The Department of Geology will derive benefit also from the changes made. The third floor of Van Nest Hall will also be divided into three class rooms, for the better accommodation of the department of English.

The financial year of the College has been a very satisfactory one. There has not been large increase in endowment, and there has been no decrease in the debt incurred for recent property purchases and erection; there has been slight increase in such obligation. The increase in receipts appears in virtually every line of income. The largest addition to endowment is from the estate of the late Miss Susan Y. Lansing of Albany; her will provided \$5,000 for the College, and in addition, one-third of the residuary estate. The direct and the residuary bequests have been paid in, amounting in all to \$19,829.35. Further addition to general endowment has been through the Alumni Fund, \$4,000, including

## REPORT OF THE BOARD OF TRUSTEES.

\$1,000 from the Honorable G. D. B. Hasbrouck of the Class of 1880. Gifts for current purposes have included \$2,900 from donors of \$100 each to the Administration Fund; \$2,000 for Preparatory School deficiency, 1910-11, additional to the \$3,000 for that purpose reported a year ago, and including three gifts of \$5,000 each; two gifts of \$1,000 each, for Preparatory School deficiency, 1911-12; \$2,000 from Mrs. Ralph Voorhees for Ralph Voorhees Library. The Morrill Fund has provided \$50,000 instead of the \$45,000 of last year. The College Experiment Station has received the same amount as last year. The income from endowment has been \$34,574.09. The income from personal student payments additional to scholarship payments has been \$27,997.39. The total receipts have been \$288,187.44. While all obligations of the College have been met, virtually every obligation to the College has also been paid. This remarkable record for the year is prevailingly due to the great efficiency of the treasurer's office. The expense of administration in that office and in the registry office of necessity increases, but is more than justified by the excellence of the work, and the results.

The Library, through the Librarian, George A. Osborn, B.Sc., reports distinct advance in its property, working equipment and practical efficiency. The generous donation of Mrs. Ralph Voorhees gives the building much better appearance and adaptation. Additional shelving has been placed; a best type of filing cases has been installed; cabinets for historical collections and exhibits have also been provided. The number of books has been increased by 2,470, making a total of 66,991 now in the Library; the circulation has been 8,646. The largest single addition has been the Entomological Library of the late Professor John Bernhard Smith. Mrs. Smith has very generously made a gift to the College of Professor Smith's collection of Lepidoptera and Noctuidæ. It is an exceedingly valuable donation; it will bear his name; and, with the Hulst Collection, already owned, will emphasize and strengthen the position of Rutgers as a foremost institution in the richness of such collected treasure, in the facilities for investigation and demonstration in Entomology. The College now purchases Professor Smith's library, believing that it should not be dissipated, and that it should not be separated from the col-

## REPORT OF THE BOARD OF TRUSTEES.

lections, and that it will add substantially to the library values of Rutgers. The next largest single addition has been the law library of the late Mansfield L. Hillhouse, LL.B., First Director of the Hispanic Society, presented by his widow, Mrs. Isabel Hillhouse. The list of donors to the library is a long one, showing a wide interest in the College and in its library values on the part of Alumni and others. In certain departments and in certain groups of periodical literature the library is conspicuously strong. In other departments it urgently needs development. The funds available for purchases are not large; the amount should be increased by gifts to endowment and to income; and the donation of books themselves and periodicals is a great service at all times. The desire for historical material is again emphasized, the call for printings and manuscripts and photographs and relics in any way related to Rutgers. The material now possessed is by no means insignificant. It has been recently disposed in new specially made cabinets for satisfactory exhibit and is a frank call upon all interested to make any possible additions to the collection, now that they can be well placed and cared for. The management of the library is now distinctly more adequate than ever before and its service for the College and the community was never so efficient. The open hours have been again slightly increased, and now extend uninterruptedly from 8 A. M. to 10 P. M.

The Museum through Professor J. Volney Lewis, Director, reports in part as follows: While no great or very notable additions have been made to the collections during the year, donations of considerable value have been received from many friends. Worthy of special mention among these are Messrs. Harry R. Lee, Class of 1903; John H. Voorhees, Class of 1911; Alfred C. Hawkins, of Princeton University; John A. Manley, of New Brunswick; David Jenkins, Class of 1906; Prof. H. B. North, of the Department of Chemistry. As in former years, collections have been made in various parts of New Jersey by the Director, in connection with work for the Geological Survey of the State, including rocks, minerals, microscopic sections and photographs. These are all on deposit in the department and form a valuable source of material for students in the advanced elective courses. According to the records of attendance kept by the Assistant,

## REPORT OF THE BOARD OF TRUSTEES.

there have been about 1,800 visitors to the Museum per annum for the past several years; and since the opening in 1893, the total is about 31,800. In addition to these a considerable number of people avail themselves of the facilities of the department by correspondence concerning rocks, minerals, cements, ores and a variety of topics in the related natural sciences. The usefulness of the Museum in class instruction, which is perhaps its chief function, has been considerably increased during the year by the enlargement, revision, and relabeling of the collections of rocks and structural specimens.

Professor Jacob G. Lipman, Ph.D., has been appointed Director of the College Experiment Station to succeed the late Professor Edward B. Voorhees, D.Sc. This action coincided with the choice of Dr. Lipman as Director of the State Experiment Station, and in conformity with it and with his professorship in the agricultural department of the College, he has been made Director also of the College Farm and of the Short Courses in Agriculture. The work of the Experiment Stations is reported and published in full by the Director and his associates. It need only be said here that the work maintains with great vigor along old lines and along new lines from time to time undertaken. Some new experts and workers have been added to the staff. New and larger appropriations by the State have provided new activities and larger facilities at the Farm. The Farm itself is greatly improved by the changes following upon the fire of last summer and by special attention to the buildings and their immediate grounds. The Short Courses in Agriculture, under their Principal, Professor Kary C. Davis, Ph.D., have been attended by 128 students, an increase of nearly fifty over last year, which was the largest attendance up to that time. A new course in poultry husbandry was very successfully given. The present facilities have been scarcely sufficient for the number of students and the attendance quite surely will continue to increase. The slight increase in appropriation and the coming erection of the Agricultural Building will enable the College to adequately meet the situation.

Charter Day was observed November 10th, 1911, with address by the Honorable James Bryce, D.C.L., Ambassador from Great Britain to the United States. Usual College exercises were suspended and the celebration exercises were held in the Robert F.



## REPORT OF THE BOARD OF TRUSTEES.

Ballantine Gymnasium in order to allow a largest possible audience, and the hall was filled, the College attending in a body. Mr. Bryce's address was on the Luther Laflin Kellogg Foundation; his subject was "The Reading of Books." An interesting incident in the program of the hour was the conferring of the degree of Bachelor of Arts in the presence of the Ambassador upon Francis Marmaduke Potter, who had just returned from England with that degree from Oxford University. Mr. Potter received the degree as of the Class of 1909, having been a member of that Class at Rutgers until he left at the end of Junior year to enter upon appointment as Rhodes Scholar from New Jersey. A further incident was the announcement that the so-called John Bogart Letters had come into the possession of the College. These are letters, forty-seven in all, bearing upon the earliest life of Queen's, now Rutgers College. John Bogart was an earliest graduate and then a tutor of Queen's Grammar School and Queen's College; after graduation he carried on correspondence with his College friends; and this bundle of letters passed down from him unnoted until received in the family of the Rev. Charles T. Anderson, a minister of the Reformed Church; their importance was at once realized, and their transfer to the College in time has been accomplished. A few are written by John Bogart himself; most are written to him by Simeon De Witt, Jeremiah Smith, James Schureman and other early students of Queen's. Interesting references to the Revolutionary War and other matters of the time abound. The references to the College circumstances, and the picture of the student life and friendship make the letters a valuable item in the College's historical collections. Their acquiring on Charter Day was peculiarly appropriate. In addition to the address of Mr. Bryce, two others were given during the year on the Kellogg Foundation, one by President Edwin A. Alderman, of the University of Virginia, on "The Problem of Democracy," the other by Professor Henry Van Dyke, of Princeton University, on "The Good Enchantment of Dickens." Other addresses made during the year before societies and clubs by others than members of the College have seen: before the Phi Beta Kappa Society, by President John Grier Hibben, of Princeton, Justice Francis J. Swayze, of the New Jersey Supreme Court, and Professor Bergen Davis, of Columbia;

## REPORT OF THE BOARD OF TRUSTEES.

before the Historical Club by Edward Q. Keasbey, Esq., William H. Benedict, Esq., the Rev. James W. Marshall, D.D., the Rev. Clifford P. Case and Mr. Charles Deshler; before the Civil Engineering Club by John Bogart, D.Sc., William C. Ward, B.Sc., and Mr. Edward Wegmann; before the Chemical Club by Dr. H. S. Miner, Dr. W. A. Ducca and Prof. G. A. Hulett; before the Biological Club by Dr. C. S. Romer and Dr. Marshall A. Howe; before the Microscopical Society by Mr. A. Wayne Clark; before the Philoclean Society by Mr. S. M. Christie; before the Y. M. C. A. by Mr. J. S. Elliott; and before the Alliance Française by Monsieur Louis A. Loiseaux, Monsieur Claude Benedict, Monsieur Daniel Jordan, Dr. Louis Delamarre, Monsieur Henry Bargy and Professor Raphael D'Amour.

Preachers at the Sunday Chapel Service have included, beside ministers in the Faculty of the College and of the New Brunswick Seminary, the Rev. Henry E. Cobb, D.D., the Rev. John M. Vander Meulen, D. D., the Rev. William I. Chamberlain, D.D., the Rev. Francis Brown, D. D., LL.D., the Rev. Everett T. Tomlinson and the Rev. Alexander MacColl.

Commencement week was begun with the morning Chapel Sermon by Professor J. Frederic Berg, Ph.D., D.D., of the Class of 1892, and the Baccalaureate Sermon in the evening at the Second Reformed Church by the Rev. William P. Merrill, D. D., of the Class of 1887, Minister of the Brick Presbyterian Church, New York City. At Commencement sixty-five candidates received the Bachelor's degree and graduate degrees were conferred on ten candidates. Honorary degrees were conferred as follows: The degree of Master of Arts on Charles Deshler, sometime member of the Class of 1885; the degree of Doctor of Letters on Thomas Tileston Wells, Esq., and on Calvin Noyes Kendall, Commissioner of Education of New Jersey; the degree of Doctor of Science on John Bogart, graduate of the Class of 1853; the degree of Doctor of Divinity on the Rev. William Rivers Taylor, graduate of the Class of 1876, and on the Rev. William Isaac Chamberlain, graduate of the Class of 1882; the degree of Doctor of Laws on the Rev. John Grier Hibben, President of Princeton University, and on the Hon. Mahlon Pitney, Justice of the Supreme Court of the United States.



## REPORT OF THE BOARD OF TRUSTEES.

During the year the President has represented Rutgers College on various occasions at other institutions. At the suggestion and through the continued generosity of the trustee, Mr. L. F. Loree, he has been able to continue the series of personal visits to other institutions. Last year those visited were the Carnegie Technical School at Pittsburgh, Purdue University, Valparaiso University, Cornell University, Cincinnati University and the Universities of Ohio, Illinois, Michigan, Wisconsin and Minnesota. This year those visited were Case School of Applied Science, Western Reserve University, Toronto University, McGill University, Bowdoin College, Brown University, Colgate University, Hamilton College and Rensselaer Polytechnic Institute. Addresses have been made on many and varied occasions.

In presenting this report I beg to append as part thereof a statement giving the College courses, the entrance requirements, and general information; also full registry of Visitors, Trustees, Faculty and Students for the college year 1911-12.

All of which is respectfully submitted,

W. H. S. DEMAREST,  
*President.*

## Examinations and Certificates.

Admission is either by examination or by certificate.

1. Entrance examinations for admission will be held at the College on Friday and Saturday, June 13 and 14, 1913.

2. The State competitive examinations will be held in each county on Friday and Saturday, June 6 and 7, 1913.

3. Students who have passed the examinations held under the authority of the Regents of the State of New York, or the examinations of the College Entrance Examination Board, are admitted on presentation of testimonials to that effect.

4. Students who, being graduates of a four years' course, present certificates from certain schools approved by the Faculty of the College, are exempted from examination in the studies thus certified.

## II. REQUIREMENTS FOR ADMISSION.

The requirements for admission to the freshman class for 1913 are fully stated in the catalogue, which may be had on application. A brief statement in tabular form here follows, for the understanding of which it is necessary to remember that a "point" may be defined as a subject of the secondary school curriculum pursued throughout an academic year for four or five periods a week.

<i>For the Course leading to the degree of Bachelor of Arts.</i>		<i>For the Course leading to the degree of Bachelor of Letters.</i>		<i>For the General Science Course leading to the degree of Bachelor of Science or Bachelor of Letters.</i>		<i>For the Technical Courses in Civil, Electrical, and Mechanical Engineering, in Chemistry, Ceramics, Agriculture, and Biology, leading to the degree of Bachelor of Science.</i>	
	<i>Points.</i>		<i>Points.</i>		<i>Points.</i>		<i>Points.</i>
English, . . . . .	3	English, . . . . .	3	English, . . . . .	3	English, . . . . .	3
Mathematics, . .	3	Mathematics, . .	3	Mathematics, . .	3	Mathematics, . .	4
History, . . . . .	2	History, . . . . .	2	History, . . . . .	1—3	History, . . . . .	1—3
		German or		German and		German and	
Greek, . . . . .	3	French, . . . . .	3	French, . . . . .	3—6	French, . . . . .	2—5
Latin, . . . . .	4	Latin, . . . . .	4	Science, . . . . .	1—3	Science, . . . . .	1—3
	15		15		15		14

1. For admission to the A.B. and Litt.B. courses 15 points are required.

For admission to the general B.Sc. course the requirements are as follows: 3 points in English, 3 points in Mathematics, and 9 points in other subjects, making a total of 15 points.

## REQUIREMENTS FOR ADMISSION.

For admission to the technical B.Sc. courses the requirements are as follows: 3 points in English, 4 points in Mathematics, and 7 points in other subjects, making a total of 14 points.

In 1914, for admission to the technical B.Sc. courses, 15 points will be required, the additional point to be offered in either language, science, or history, as the candidate may prefer.

2. **ENGLISH.**—In English the standard college entrance requirement of four years, equated as 3 points, is in force for admission to all courses.

3. **MATHEMATICS.**—In Mathematics, for the A.B. and Litt.B. courses, the requirement is Algebra through ratio and proportions, and progressions, and Plane Geometry, equated as 3 points.

For the general B.Sc. course the requirement is Algebra, as above, and Plane Geometry, equated as 3 points.

For the technical B.Sc. courses the requirement is Algebra, as above, Plane and Solid Geometry, and Plane Trigonometry, equated as 4 points.

4. **LATIN.**—In Latin, for the A.B. and Litt.B. courses, a standard four-year course is required, covering beginner's Latin, reading of texts equal in amount to four books of the Gallic War, six orations of Cicero, and six books of the Aeneid, grammar, and prose composition, the whole equated as 4 points. The texts prescribed for reading are Cicero's orations for the Manilian law and for Archias, and Virgil's Aeneid, Books I, II, and either IV. or VI. For a list of the works from which the remainder of the reading may be selected see Rutgers College Catalogue. The certificate requirement in prose composition is formulated as the equivalent of one period a week during the last two years of the school course.

5. **GREEK.**—In Greek a standard three-year course is required for admission to the A.B. course, covering beginner's Greek, Xenophon, Homer, and prose composition, equated as 3 points.

6. **GERMAN AND FRENCH.**—For the Litt.B. course three years of German or French (i. e. "Intermediate" German or French as defined by the Uniform Entrance Examination Board) are required, equated as 3 points.

For the general B.Sc. course (a) three years of German or French, or (b) four years, two of each language, or (c) five years, three of either language and two of the other, or (d) six years, three of each language, may be offered and will be equated accordingly.

For the technical B.Sc. courses (a) two years of German or French, (b) three years of German or French, (c) four years, two of each language, or (d) five years, three of either language and two of the other, may be offered and will be equated accordingly.

For the B.Sc. courses, general and technical, two or three years of Latin will be allowed for the present as an equivalent for a corresponding amount of either German or French. Not more than three years nor less than two years will be accepted in any language.

7. **SCIENCE.**—In Science, for the B.Sc. courses, one year's experimental science is required, either Physics or Chemistry, equated as 1 point.

One year's Physics and one year's Chemistry may be offered and will be equated as 2 points.

A third science, i. e. a year's course in Botany, or Zoology, or Botany and Zoology, equated as 1 point, may be offered to make up the total number of points required.

8. **HISTORY.**—In History, for the A.B. and Litt.B. courses, the requirement is Ancient History, together with either United States History and Civics, or Medieval and Modern History, or English History, the two courses being equated as 2 points.

For the B.Sc. courses, one course in History is required, to be chosen from those named above, and equated as 1 point, and two, or three, courses in History may be offered and will be equated accordingly.

# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

## III. COURSES OF STUDY.

The College offers courses leading to the degrees of A.B., Litt.B., and B.Sc. Under the last are included a general science course, and technical science courses in Civil Engineering, Electrical Engineering, Mechanical Engineering, Chemistry, Ceramics, Agriculture and Biology. The A. B., the Litt. B., and the general science courses permit large freedom in the choice of electives and provide liberal preparatory training for the professions of law, medicine, theology, teaching and journalism. The technical science courses are designed to prepare for industrial positions of leadership, except the course in Biology, which aims to give a liberal training in the sciences and is especially appropriate as a preliminary to the study of medicine. Short courses, not leading to a degree, are offered in Ceramics and in Agriculture. The following details may be noted:

1. Students entering with the requirements of the course leading to the degree of Litt. B. may substitute beginner's Greek for the modern language of the freshman year, and will take regular freshman Greek in the sophomore year. In this case the degree of A.B. will be conferred on completion of the course.
2. Students pursuing the general science course, in case more than half their elective work in the junior and senior years is chosen in language, history, political science, ethics, pedagogy, or philosophy, will receive at graduation the degree of Litt.B.
3. Students entering with the requirements for the technical science courses may at the close of the freshman year be transferred to the general science course, pursuing history, physics, French, and drill with the general science students, and English with the technical science students, together with five elective hours as set forth on the next page.
4. Students in the general science course, who so desire, may at the close of the freshman year be transferred to the technical science course in Agriculture or in Biology.

In the simplest form, the courses of study may be tabulated as follows:

### FRESHMAN YEAR.

A. B. COURSE.	LITT.B. COURSE.	GENERAL B.S.C. COURSE.	TECHNICAL B.S.C. COURSES.
Hours.	Hours.	Hours.	Hours.
English ..... 4	English ..... 4	English, ..... 4	English, ..... 5
Mathematics, .. 4	Mathematics, .. 4	Mathematics, .. 4	Mathematics, .. 5
Greek, ..... 4	German, ..... 4	German, ..... 4	German, ..... 4
(Greek A...5)		General Chemistry	General Chemistry
Latin, ..... 4	Latin, ..... 4	Recitation, .. 1	Recitation, .. 1
		Lectures, ... 2=1	Lectures, ... 2=1
		Laboratory, .. 3=1	Laboratory, .. 3=1
Physical Train- ing, ..... 4=2	Physical Train- ing, ..... 4=2	Drafting, ..... 4=2	Drafting, ..... 4=2
		Drill, ..... 2=1	Drill, ..... 2=1
18	18	18	18



## COURSES OF STUDY.

### SOPHOMORE YEAR.

Physics, . . . . .	2	Physics, . . . . .	2	Physics, . . . . .	2	Physics, . . . . .	2
Laboratory, . . .	3=1	Laboratory, . . .	3=1	Laboratory, . . .	3=1	Laboratory, . . .	3=1
French or		French, . . . . .	3	French, . . . . .	3	French or	
German, . . . . .	3	History, . . . . .	4	History, . . . . .	4	German, . . . . .	3
History, . . . . .	4	Elective, . . . . .	6	Elective, . . . . .	6	English, . . . . .	2
Elective, . . . . .	6	Physical Train-		Drafting, . . . . .	2=1	Technical, . . . . .	9
ing, . . . . .	4=2	ing, . . . . .	4=2	Drill, . . . . .	2=1	Drill, . . . . .	2=1
	18		18		18		18

### JUNIOR YEAR.

#### *First Term.*

Ethics, . . . . .	3	Ethics, . . . . .	3	Ethics, . . . . .	3	History, . . . . .	3
Logic, . . . . .	3	Logic, . . . . .	3	Logic, . . . . .	3	Military Sci-	
English Bible, . .	2	English Bible, . .	2	Military Sci-		ence, . . . . .	2
Elective, . . . . .	9	Elective, . . . . .	9	Elective, . . . . .	9	Technical, . . . . .	12
	17		17	Drill, . . . . .	2=1	Drill, . . . . .	2=1

#### *Second Term.*

Ethics, . . . . .	3	Ethics, . . . . .	3	Ethics, . . . . .	3	History, . . . . .	3
Psychology, . . .	3	Psychology, . . .	3	Psychology, . . .	3	Military Sci-	
Astronomy, . . .	2	Astronomy, . . .	2	Astronomy, . . .	2	ence, . . . . .	1
Elective, . . . . .	9	Elective, . . . . .	9	Elective, . . . . .	9	Technical, . . . . .	13
	17		17	Drill, . . . . .	2=1	Drill, . . . . .	2=1

### SENIOR YEAR.

#### *First Term.*

Political Econ-		Political Econ-		Political Econ-		Political Econ-	
omy, . . . . .	3	omy, . . . . .	3	omy, . . . . .	3	omy, . . . . .	3
International		International		International		International	
Law, . . . . .	1	Law, . . . . .	1	Law, . . . . .	1	Law or Eth-	
History of Art, 2=1		History of Art, 2=1		History of Art, 2=1		ics, . . . . .	1
Elective, . . . . .	12	Elective, . . . . .	12	Elective, . . . . .	12	Technical, . . . . .	13
	17		17	Drill, . . . . .	2=1	Drill, . . . . .	2=1
				Target Prac-		Target Prac-	
				tice, . . . . .		tice, . . . . .	

#### *Second Term.*

Constitutional		Constitutional		Constitutional		Constitutional	
Law, . . . . .	4	Law, . . . . .	4	Law, . . . . .	4	Law, . . . . .	4
History of Art, 2=1		History of Art, 2=1		History of Art, 2=1		Technical, . . . . .	13
Elective, . . . . .	12	Elective, . . . . .	12	Elective, . . . . .	12	Drill, . . . . .	2=1
	17		17	Drill, . . . . .	2=1		

Exercises in English composition and public speaking are required of all students throughout the four years, each being credited as the equivalent of 1 hour a week for each term.

## IV. ELECTIVES AND OPTIONS.

Before choosing their electives, students must consult the professors concerned, and at the beginning of the sophomore year

## REPORT OF RUTGERS SCIENTIFIC SCHOOL.

students in the technical science courses must consult also the head of the technical science course which they intend to pursue. There is a standing committee of the Faculty to which all elective choices are submitted for approval. All choices are subject to the requirements of the schedule, and will be allowed only when the previous preparation of the student qualifies him for the work chosen.

---

### V. SOPHOMORE ELECTIVES.

Students in the A.B. and Litt.B. courses may take in continuation of their freshman work, any two of the 3-hour sophomore courses in English, Latin, Greek, (A.B. course), German (Litt.B. course), and mathematics, but those who have taken beginner's Greek (Greek A) in the freshman year must continue with regular freshman Greek in the sophomore year.

Students in the general science course may take in continuation of their freshman work any two of the 3-hour sophomore courses in English, German, and mathematics, or they may choose science (5 hours) with those pursuing the course in Biology, together with Biological Laboratory (2 hours=1.)

Students transferred from the technical science courses to the general science course, will choose, in addition to the required subjects, five hours of work from the following.

1. Pure mathematics (4 hours) with those pursuing the engineering courses, together with drafting (2 hours=1).
2. Mathematics (3 hours) with those pursuing the courses in Chemistry and Ceramics, together with drafting (4 hours=2).
3. Science (5 hours) with those pursuing the course in Biology.

---

### VI. JUNIOR AND SENIOR ELECTIVES.

At the beginning of the junior year students in the A.B., Litt.B., and general B.Sc. courses will choose three electives. At the beginning of the senior year two of these must be continued, but the third may be changed for any other senior elective, subject to the general rules.



## SOPHOMORE, JUNIOR AND SENIOR ELECTIVES.

The following electives are offered:

	<i>Junior Year.</i>	<i>Senior Year.</i>
Philosophy .....	3 hours weekly.	4 hours weekly.
Pedagogy .....	3 " "	4 " "
History .....	3 " "	4 " "
Political Science .....	3 " "	4 " "
Latin .....	3 " "	4 " "
Greek .....	3 " "	4 " "
English .....	3 " "	4 " "
French .....	3 " "	4 " "
Italian .....	3 " "	4 " "
Spanish .....	3 " "	4 " "
German .....	3 " "	4 " "
Mathematics .....	3 " "	4 " "
Physics .....	3 " "	4 " "
Chemistry .....	3 " "	4 " "
Geology and Mineralogy .....	3 " "	4 " "
Zoology and Physiology .....	3 " "	4 " "
Botany, Bacteriology, and Entomology..	3 " "	4 " "
Astronomy .....	—	4 " "
Ethics .....	—	4 " "
Hebrew (extra) .....	—	2 " "

---

## VII. MODERN LANGUAGE RULES AND OPTIONS.

Certain rules will govern the choice of French or German in the sophomore year.

1. Students in the technical B.Sc. courses who have offered no German for entrance will continue German from the freshman year.
2. Students in the technical B.Sc. courses who have offered German and no French for entrance will take French.
3. Students in the technical B.Sc. courses who have offered both German and French for entrance will choose, subject to approval, either French or German.
4. Students in the A.B. course will choose, subject to approval, either French or German.

---

## VIII. TECHNICAL SCIENCE COURSES.

The technical science courses begin to diverge with the sophomore year, the specialization increasing each year thereafter. The course, not the individual subject, is chosen, and transfers from one course

## REPORT OF RUTGERS SCIENTIFIC SCHOOL.

to another are allowed only by permission of the Faculty, and on condition that all omitted work is made up. The following is an outline of these courses beginning with the sophomore year:

### SOPHOMORE YEAR.

#### *First Term.*

CIVIL ENGINEERING.		ELECTRICAL ENGINEERING.		MECHANICAL ENGINEERING.	
	<i>Hours.</i>		<i>Hours.</i>		<i>Hours.</i>
English Literature, ..	2	English Literature, ..	2	English Literature, ..	2
French or German, ..	3	French or German, ..	3	French or German, ..	3
Physics, .....	2	Physics, .....	2	Physics, .....	2
Laboratory, .....	3=1	Laboratory, .....	5=2	Laboratory, .....	5=2
Calculus, .....	4	Calculus, .....	4	Calculus, .....	4
Descriptive Geom- etry, .....	3	Mechanical Technol- ogy, .....	4=2	Mechanical Technol- ogy, .....	4=2
Drafting, .....	4=2	Machine Drawing, ..	4=2	Machine Drawing, ..	4=2
Military Drill, .....	2=1	Military Drill, .....	2=1	Military Drill, .....	2=1
	18		18		18

#### *Second Term.*

American Literature, ..	2	American Literature, ..	2	American Literature, ..	2
French or German, ..	3	French or German, ..	3	French or German, ..	3
Physics, .....	2	Physics, .....	2	Physics, .....	2
Laboratory, .....	3=1	Laboratory, .....	5=2	Laboratory, .....	5=2
Calculus, .....	4	Calculus, .....	4	Calculus, .....	4
Surveying, .....	3	Surveying, .....	2	Mechanical Technol- ogy, .....	4=2
Drafting, .....	4=2	Machine Drawing, ..	4=2	Machine Drawing, ..	4=2
Military Drill, .....	2=1	Military Drill, .....	2=1	Military Drill, .....	2=1
	18		18		18

#### *Summer.*

<i>Total Hours.</i>		<i>Total Hours.</i>		<i>Total Hours.</i>	
Field Practice in Surveying, .....	100	Field Practice in Surveying, .....	100	Machine Construc- tion, .....	100

### JUNIOR YEAR.

#### *First Term.*

	<i>Hours.</i>		<i>Hours.</i>		<i>Hours.</i>
European History, ..	3	European History, ..	3	European History, ..	3
Military Regulations, ..	2	Military Regulations, ..	2	Military Regulations, ..	2
Mechanics, .....	5	Mechanics, .....	5	Mechanics, .....	5
Electrical Engineer- ing, .....	3	Electrical Engineer- ing, .....	3	Electrical Engineer- ing, .....	3
Applied Geology, ...	1	Telephones and Tel- egraphs, .....	2	Kinematics, .....	4=2
Lectures, .....	2=1	Electrical Labora- tory, .....	5=2	Graphics of Machine Forces, .....	4=2
Lettering and Topography, .....	4=2	Military Drill, .....	2=1	Military Drill, .....	2=1
Military Drill, .....	2=1				
	18		18		18

#### *Second Term.*

United States His- tory, .....	3	United States His- tory, .....	3	United States His- tory, .....	3
Military Regulations, ..	1	Military Regulations, ..	1	Military Regulations, ..	1
Mechanics, .....	4	Mechanics, .....	4	Mechanics, .....	4
Railway Engineer- ing, .....	3	Elements of Alter- nating Currents, ..	5	Dynamo-Electric Machinery, .....	5
Roofs and Bridges, ..	3	Dynamo Laboratory, ..	3=1	Dynamo Laboratory, ..	3=1
Laboratory, .....	3=1	Steam Engineering, ..	2	Steam Engineering, ..	2
Graphic Statics, .....	4=2	Engineering Labora- tory, .....	3=1	Engineering Labora- tory, .....	3=1
Military Drill, .....	2=1	Military Drill, .....	2=1	Military Drill, .....	2=1
	18		18		18

# TECHNICAL SCIENCE COURSES.

## Summer.

CIVIL ENGINEERING.	ELECTRICAL ENGINEERING.	MECHANICAL ENGINEERING.
<i>Total Hours.</i>	<i>Total Hours.</i>	<i>Total Hours.</i>
Field Practice in Railroad Surveying, ..... 100	Engineering and Dynamo Laboratories, ..... 100	Engineering and Dynamo Laboratories, ..... 100

## SENIOR YEAR.

### First Term.

<i>Hours.</i>	<i>Hours.</i>	<i>Hours.</i>
Ethics, or International Law, ..... 1	Ethics, or International Law, ..... 1	Ethics, or International Law, ..... 1
Political Economy, .. 3	Political Economy, .. 3	Political Economy, .. 3
Mechanics and Strength of Materials, ..... 4	Mechanics and Strength of Materials, ..... 4	Mechanics and Strength of Materials, ..... 4
Laboratory, ..... 3=1	Thermodynamics, ... 2	Thermodynamics, ... 2
Elements of Machinery, ..... 2	Advanced Alternating Currents, .... 4	Graphic Statics, .... 4=2
Highway and Sanitary Engineering, .. 4	Electrical Design, .. 2=1	Kinematics, ..... 4=2
Designs of Engineering Structures, ... 4=2	Dynamo Laboratory, .. 5=2	Machine Design, ... 4=2
Military Drill, ..... 2=1	Military Drill, ..... 2=1	Engineering Laboratory, ..... 3=1
Target Practice, ....	Target Practice, ....	Military Drill, ..... 2=1
18	18	18

### Second Term.

Constitutional Law, .. 4	Constitutional Law, .. 4	Constitutional Law, .. 4
Practical Astronomy, .. 3	Advanced Alternating Currents, .... 5	Hydraulic Engineering, ..... 2
Hydraulic Engineering, ..... 2	Electric Power Transmission, .... 2	Thermodynamics, ... 3
Materials and Methods of Construction, ..... 3	Electric Railways, .... 3	Mechanics and Machinery, ..... 2
Geodetic Surveying, .. 2	Electrical Design, ... 2=1	Graphic Dynamics, .. 4=2
Laboratory, ..... 3=1	Dynamo Laboratory, .. 5=2	Machine Design, ... 6=3
Designs of Engineering Structures, ... 4=2	Military Drill, ..... 2=1	Engineering Laboratory ..... 3=1
Military Drill, ..... 2=1	Graduation Thesis, ..	Military Drill, ..... 2=1
Graduation Thesis, ..		Graduation Thesis, ..
18	18	18

## SOPHOMORE YEAR.

### First Term.

CHEMISTRY.	<i>Hours.</i>	CERAMICS.	<i>Hours.</i>
English Literature, ..... 2		English Literature, ..... 2	
French or German, ..... 3		French or German, ..... 3	
Physics, ..... 2		Physics, ..... 2	
Laboratory, ..... 3=1		Laboratory, ..... 3=1	
Calculus, ..... 3		Calculus, ..... 3	
Qualitative Analysis, ..... 2		Qualitative Analysis, ..... 2	
Laboratory, ..... 10=4		Laboratory, ..... 10=4	
Military Drill, ..... 2=1		Military Drill, ..... 2=1	
18		18	

### Second Term.

American Literature, ..... 2	American Literature, ..... 2
French or German, ..... 3	French or German, ..... 3
Physics, ..... 2	Physics, ..... 2
Laboratory, ..... 3=1	Laboratory, ..... 3=1
Calculus, ..... 3	Calculus, ..... 3
Qualitative Analysis, ..... 2	Qualitative Analysis, ..... 2
Laboratory, ..... 10=4	Laboratory, ..... 10=4
Military Drill, ..... 2=1	Military Drill, ..... 2=1
18	18

# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

## First Term.

Hours.		Hours.	
AGRICULTURE.		BIOLOGY	
English Literature, .....	2	English Literature, .....	2
French or German, .....	3	French or German, .....	3
Physics, .....	2	Physics, .....	2
Laboratory, .....	3=1	Laboratory, .....	3=1
Qualitative Analysis, .....	2	Qualitative Analysis, .....	2
Laboratory, .....	5=2	Laboratory, .....	5=2
Soils, .....	1	Zoology, .....	1
Laboratory, .....	3=1	Laboratory, .....	3=1
Botany, .....	2	Botany, .....	2
Laboratory, .....	3=1	Laboratory, .....	3=1
Military Drill, .....	2=1	Military Drill, .....	2=1
18		18	

## Second Term.

American Literature, .....	2	American Literature, .....	2
French or German, .....	3	French or German, .....	3
Physics, .....	2	Physics, .....	2
Laboratory, .....	3=1	Laboratory, .....	3=1
Qualitative Analysis, .....	2	Qualitative Analysis, .....	2
Laboratory, .....	5=2	Laboratory, .....	5=2
Plant Physiology, .....	2	Plant Physiology, .....	2
Laboratory, .....	3=1	Laboratory, .....	3=1
Agronomy, .....	1	Zoology, .....	1
Laboratory, .....	3=1	Laboratory, .....	3=1
Military Drill, .....	2=1	Military Drill, .....	2=1
18		18	

## Summer.

Total Hours.		Total Hours.	
Field Practice in Surveying,.....	100	Field Practice in Surveying,.....	100

## JUNIOR YEAR.

### First Term.

Hours.		Hours.	
CHEMISTRY.		CERAMICS.	
European History, .....	3	European History, .....	3
Military Regulations, .....	2	Military Regulations, .....	2
Crystallography, .....	1	Crystallography, .....	1
Laboratory, .....	3=1	Laboratory, .....	3=1
Quantitative Analysis, .....	1	Quantitative Analysis, .....	1
Recitation, .....	2=1	Laboratory, .....	8=3
Lectures, .....	12=5	Elements of Electrical Engineering, .....	3
Laboratory, .....	3	Origin and Nature of Clays,.....	3
Industrial Chemistry, .....	2=1	Military Drill, .....	2=1
Military Drill, .....	18	18	

### Second Term.

United States History, .....	3	United States History, .....	3
Military Regulations, .....	1	Military Regulations, .....	1
Mineralogy, .....	1	Mineralogy, .....	1
Laboratory, .....	3=1	Laboratory, .....	3=1
Quantitative Analysis, .....	1	Quantitative Analysis, .....	1
Recitation, .....	2=1	Laboratory, .....	8=3
Lectures, .....	15=6	Winning and Preparation of Clays. .....	3
Laboratory, .....	3	Ceramic Calculations, .....	3
Industrial Chemistry, .....	2=1	Ceramics Laboratory, .....	3=1
Military Drill, .....	18	Military Drill, .....	2=1
18		18	

# TECHNICAL SCIENCE COURSES.

## First Term.

AGRICULTURE		BIOLOGY	
	Hours.		Hours.
European History, .....	3	European History, .....	3
Military Regulations, .....	2	Military Regulations, .....	2
Quantitative Analysis, .....	8=3	Quantitative Analysis, .....	8=3
Laboratory, .....	2	Laboratory, .....	2
Bacteriology, .....	3=1	Bacteriology, .....	3=1
Laboratory, .....	1	Laboratory, .....	1
Zoology, .....	3=1	Vertebrate Anatomy and Em- bryology, .....	3
Dairy Husbandry, .....	1	Laboratory, .....	7=3
Poultry Husbandry, .....	1		
Farm Mechanics, .....	1		
Laboratory, .....	3=1		
Military Drill, .....	2=1	Military Drill, .....	2=1
	18		18

## Second Term.

United States History, .....	3	United States History, .....	3
Military Regulations, .....	1	Military Regulations, .....	1
Entomology, .....	2	Entomology, .....	2
Laboratory, .....	3=1	Laboratory, .....	3=1
Plant Propagation, .....	2	Vertebrate Anatomy and Em- bryology, .....	3
Laboratory, .....	3=1	Laboratory, .....	7=3
Zoology, .....	1	Hygiene, .....	2
Laboratory, .....	3=1	Biochemical Laboratory, .....	5=2
Animal Husbandry, .....	2		
Laboratory, .....	3=1		
Fertilizers and Manures, .....	2		
Military Drill, .....	2=1	Military Drill, .....	2=1
	18		18

## SENIOR YEAR.

### First Term.

CHEMISTRY.		CERAMICS.	
	Hours.		Hours.
Ethics, or International Law, .....	1	Ethics, or International Law, .....	1
Political Economy, .....	3	Political Economy, .....	3
Geology, .....	3	Elements of Machinery, .....	2
Physical Chemistry, .....	2	Geology, .....	3
Organic Chemistry, .....		Glazes and Bodies, .....	1
Recitation, .....	1	Lectures, .....	2=1
Lectures, .....	2=1	Laboratory, .....	8=3
Laboratory, .....	12=5	Thermochemical Calculations, ....	3
Advanced Inorganic Chemistry, .....		Military Drill, .....	2=1
Lectures, .....	2=1	Target Practice, .....	
Military Drill, .....	2=1		
Target Practice, .....			
	18		18

### Second Term.

Constitutional Law, .....	4	Constitutional Law, .....	4
Adv. Inorganic Chemistry, .....	1	Steam Engineering, .....	3
Laboratory, .....	3=1	Driers and Kilns, .....	3
Physical Chemistry, .....	2	Thermochemical Calculations, ....	3
Organic Chemistry, .....			
Recitation, .....	1		
Lectures, .....	2=1		
Laboratory, .....	8=3	Ceramics Laboratory, .....	10=4
Organic Industrial, .....			
Chemistry, Lectures, .....	2=1		
Military Drill, .....	2=1	Military Drill, .....	2=1
Graduation Thesis, .....	8=3	Graduation Thesis, .....	
	18		18

# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

## First Term.

AGRICULTURE		BIOLOGY	
Ethics, or International Law,.....	1	Ethics, or International Law,....	1
Political Economy, .....	3	Political Economy, .....	3
Plant Pathology, .....	1	Organic Chemistry,	
Laboratory, .....	3=1	Recitation, .....	1
Farm Management, .....	1	Lectures, .....	2=1
Laboratory, .....	3=1	Laboratory, .....	8=3
*Groups I, III, VIII.....(5)	}	Neural Physiology, .....	3
Laboratory, .....		Laboratory, .....	3=1
*Groups II, IV, V, VI.....(4)		9 Mammalian Anatomy and Histology, .....	2
Laboratory, .....		Laboratory, .....	5=2
*Groups III, VIII, .....	}		
Laboratory, .....			
*Group VII .....			
Laboratory, .....	(8=3)		
Military Drill, .....	2=1	Military Drill, .....	2=1
Target Practice, .....		Target Practice, .....	
	18		18

## Second Term.

Constitutional Law, .....	4	Constitutional Law, .....	4
*Group I, .....	(5)	Organic Chemistry,	
Laboratory, .....	(13=5)	Recitation, .....	1
*Groups II, IV, V, VI, VII, (4)	}	Lectures, .....	2=1
Laboratory, .....		Laboratory, .....	8=3
*Groups III, VIII, .....		Physiology of Nutrition, .....	3
Laboratory, .....		Laboratory, .....	3=1
	(13=5)	Mammalian Anatomy and His-	
Military Drill, .....	2=1	tology, .....	2
Graduation Thesis, .....	8=3	Laboratory, .....	5=2
		Military Drill, .....	2=1
		Graduation Thesis, .....	
	18		18

\* The chief agricultural studies of the Senior year are divided into groups, of which each student chooses one. These optional groups are: I. Pomology, Entomology, Plant Pathology; II. Poultry Husbandry, Dairying; III. Dairying, Animal Husbandry; IV. Agronomy, Soil Fertility, Farm Management; V. Entomology, Botany, Plant Pathology; VI. Soil Fertility, Botany, Bacteriology; VII. Soil Fertility, Geology, Bacteriology; VIII. Veterinary Science, Animal Husbandry.



## REPORT OF RUTGERS SCIENTIFIC SCHOOL.

### IX. STATE SCHOLARSHIPS IN THE SCIENTIFIC SCHOOL

For residents of the State of New Jersey scholarships open to candidates for the degrees of Bachelor of Arts, Bachelor of Letters, or Bachelor of Science are provided as follows:

1. State Scholarships, Act of March 31, 1890, as amended by Act of March 31, 1905.

These scholarships cover all the College fees, including the charges for tuition and public-room service and special fees, altogether \$130 to \$160, according to circumstances.

Appointment to these scholarships is determined as follows:

A competitive examination, under the direction of the City Superintendents and the County Superintendent of Schools in each county, is held in each county of the State on the first Friday in June and the Saturday following of each year (in 1913 on June 6 and 7).

The whole number of such scholarships to be awarded each year is equal to the whole number of members of Assembly for the State, as follows:

Atlantic .....	1	Gloucester .....	1	Ocean .....	1
Bergen .....	2	Hudson .....	12	Passaic .....	5
Burlington .....	2	Hunterdon .....	1	Salem .....	1
Camden .....	3	Mercer .....	3	Somerset .....	1
Cape May .....	1	Middlesex .....	3	Sussex .....	1
Cumberland .....	2	Monmouth .....	3	Union .....	3
Essex .....	11	Morris .....	2	Warren .....	1

Any candidate who passes the examination is entitled to an appointment provided there is a vacancy in any district.

Students who have passed the State competitive examinations can enter the College without further examination.

2. State scholarships, Act of 1864.

These scholarships cover the charge of \$100 a year for tuition.

The scholarships under this Act are awarded, on the recommendation of the Superintendent of Schools in each county, to students who have passed the required examinations. There are, in all, forty such scholarships. Inquiries concerning vacancies for 1912 should be addressed to the Registrar.

---

### X. PRACTICAL SUGGESTIONS.

Students should examine carefully the entrance requirements and shape their courses, particularly in the third and fourth years of the secondary school, so as to be able to furnish the points required for the courses they desire to enter.

It is well to take preliminary examinations at the end of the third year in all subjects already covered, especially in Algebra and

## REPORT OF RUTGERS SCIENTIFIC SCHOOL.

Plane Geometry, both because these subjects are more likely to be fresh in mind, and because it is unwise to leave too many examinations for the last year when the time is limited.

The scholarship examinations being competitive, appointments are made in the order of excellence; therefore, a passing grade of 60 per cent., though sufficient for admission to the College, will not necessarily assure a scholarship appointment.

Students not able to pass in all subjects at the time appointed by law, (June 6 and 7, 1913) may complete their records at the entrance examinations held at the College in June and September, but such deferred examinations are not reckoned in the competition.

## Degrees Conferred Commencement, 1912.

### HONORARY DEGREES.

#### DOCTOR OF LAWS.

MAHLON PITNEY  
JOHN GRIER HIBBEN

*Morristown, N. J.*  
*Princeton, N. J.*

#### DOCTOR OF DIVINITY.

WILLIAM ISAAC CHAMBERLAIN  
WILLIAM RIVERS TAYLOR

*New Brunswick, N. J.*  
*Rochester, N. Y.*

#### DOCTOR OF LETTERS.

CALVIN NOYES KENDALL  
THOMAS TILESTON WELLS

*Trenton, N. J.*  
*New York, N. Y.*

#### DOCTOR OF SCIENCE.

JOHN BOGART

*New York, N. Y.*

#### MASTER OF ARTS.

CHARLES DESHLER

*New Brunswick, N. J.*

### GRADUATE DEGREES.

#### DOCTOR OF PHILOSOPHY.

PERCY EDGAR BROWN '06

#### CIVIL ENGINEER.

SPENCER CONE DEVAN '02

ALVIN BARTHOLDI FOX '08

ALFRED JOHN MAHNKEN '08

#### ELECTRICAL ENGINEER.

WILLIAM JAMES LANSLEY '88

#### MASTER OF ARTS.

MARCUS CORNELIUS THEOPHILUS  
ANDREAE '09

LUMAN J. SHAFER '09

JOHN DELANCEY FERGUSON '11

#### MASTER OF SCIENCE.

CLAYTON SIDNEY SMITH '09

HONORS CONFERRED.

BACHELOR OF DIVINITY.  
ROYAL ARTHUR STOUT '07

---

Degrees Conferred in Course.

BACHELOR OF ARTS.

HAROLD CURTICE AMOS	WILLIAM GETTNER HERRMANN
WALTER SAX BLOOM	HENRY KILMER HOTALING
ALAN DITCHFIELD CAMPBELL, JR.	JACOB PRESS
SEYMOUR PARKER GILBERT, JR.	VIVIAN CLINTON ROSS
VALENTINE BRITTON HAVENS	ERNEST WELD SCUDDER
WILLIAM RUDOLPH FUERCHTEGOTT STIER	

BACHELOR OF LETTERS.

JAMES K. ALVERSON	GEORGE WILLARD MARTIN
PERRY HADWICK BASCOM	JOHN DITTGEN MORRISON
FRED ARTHUR BRIEGS	MILO CLAUDE MOSEMAN
FRED MONTGOMERY FOUNTAIN	RICHARD ALEXANDER SMITH
JACOB WALTER GROENDYKE	DENTER WHITE
LEROY COLVER WILSEY	

BACHELOR OF SCIENCE.

JOHN ARTHUR	FRANCIS CLYDE FITTING
GEORGE DAVID AUCHTER	SAMUEL FURMAN FOSTER
JOHN VAIL BISSETT	RUSSELL WOODWORTH GIES
EDWARD FRANCIS BLATZ	AUGUSTUS LEMUEL GLADDING
WALTER COX BOWEN	FREDERIC GLANDER
LEONARD STOTT BRIGGS	AARON MARTIN HAGEMAN
HAROLD JASPER CADMUS	GEORGE EDWARD HAGEMANN
ROBERT STEPHEN CLEAVER	ALBERT LEWIS HAGEN
HENRY CLIFTON COOPER	EDWIN HOWE HALSTED
ELBRON FISHER	HERBERT WILLIAM HEILMANN
HENRY VICTOR JACOBSON	JOHN RICHARD NEVIUS
ORAN KELLER	HERBERT RAMSEY PEEBLES
RALPH JACOB KIEFFER	DONALD ROSS
ALSON CARLTON LEWELLYN	ROBERT SCHMIDT
JOHN FRANCIS MCGOVERN, JR.	EDWARD COLLIER SCOTT
JOHN PRESTON MAILLER	STEPHEN PARSONS SMITH
JAMES WALTER MAILLER	WILLIAM EMMONS SMOCK
JOHN OSBORN MARSH	HAROLD MORLOCK TERRILL
WILLIAM HERBERT MARTIN	ARTHUR BENTLEY TITSWORTH
LOUIS FOWLER MERRILL	EARL EDWARD VAN DERWERKER
ALFRED ARTHUR NELSON	ELMER LEIGH WALKER
FREDERICK WOELFLE	

Honors Conferred Commencement, 1912.

---

GRADUATION HONORS.

HIGHEST HONORS.

SEYMOUR PARKER GILBERT, JR.

## REPORT OF RUTGERS SCIENTIFIC SCHOOL.

### HIGH HONORS.

WALTER SAX BLOOM  
ALAN DITCHFIELD CAMPBELL, JR.  
GEORGE EDWARD HAGEMANN

HERBERT WILLIAM HEILMANN  
RALPH JACOB KIEFFER  
VIVIAN CLINTON ROSS

### HONORS.

HAROLD CURTICE AMOS  
LEONARD STOTT BRIGGS  
RUSSELL WOODWORTH GIES  
VALENTINE BRITTON HAVENS  
WILLIAM GETTIER HERRMAN  
HENRY VICTOR JACOBSON  
JOHN OSBORN MARSH  
GEORGE WILLARD MARTIN

LOUIS FOWLER MERRILL  
HERBERT RAMSEY PEEBLES  
ROBERT SCHMIDT  
WILLIAM RUDOLPH FUERCHTEGOTT  
STIER  
EARL EDWARD VAN DERWERKER  
ELMER LEIGH WALKER  
LEROY COLVER WILSEY

FREDERICK WOELFLE

### SPECIAL HONORS.

In Spanish .....	HAROLD CURTICE AMOS
In Greek .....	WALTER SAX BLOOM
In Ceramics .....	LEONARD STOTT BRIGGS
In Political Science.....	SEYMOUR PARKER GILBERT, JR.
In Latin .....	SEYMOUR PARKER GILBERT, JR.
In Philosophy .....	SEYMOUR PARKER GILBERT, JR.
In Mechanical Engineering .....	GEORGE EDWARD HAGEMANN
In Electrical Engineering.....	RALPH JACOB KIEFFER

### COMMENCEMENT SPEAKERS.

HAROLD CURTICE AMOS	SEYMOUR PARKER GILBERT, JR.
ALAN DITCHFIELD CAMPBELL, JR.	GEORGE EDWARD HAGEMANN
VALENTINE BRITTON HAVENS	

### MILITARY DISTINCTION.

The "Best Soldier," whose name is engraved on a bronze tablet in the Ballantine Gymnasium:

Cadet Major ALFRED ARTHUR NELSON.

The following cadets were reported to the Adjutant General, United States Army, and to the Adjutant Generals of their respective States as having shown special aptitude for military service:

Cadet Major ALFRED ARTHUR NELSON  
Cadet Captain and Adjutant EARL EDWARD VAN DERWERKER  
Cadet Captain RICHARD ALEXANDER SMITH  
Cadet Captain WALTER COX BOWEN  
Cadet Captain JOHN DITTGEN MORRISON  
Cadet Captain ARTHUR BENTLEY TITSWORTH  
Cadet First Lieutenant GEORGE WILLARD MARTIN  
Cadet First Lieutenant JOHN ARTHUR

### HONORS IN PHYSICAL DEPARTMENT.

LEONARD STOTT BRIGGS	VALENTINE BRITTON HAVENS
ALFRED ARTHUR NELSON	

## UNDERGRADUATE HONORS.

### PHI BETA KAPPA.

#### CLASS OF 1912.

HAROLD CURTICE AMOS	SEYMOUR PARKER GILBERT, JR.
WALTER SAX BLOOM	GEORGE EDWARD HAGEMANN
LEONARD STOTT BRIGGS	VALENTINE BRITTON HAVENS
ALAN DITCHFIELD CAMPBELL, JR.	HERBERT WILLIAM HEILMANN
	RALPH JACOB KIEFFER

### FELLOWSHIP APPOINTMENTS.

#### VANDER POEL FELLOWSHIP IN CHEMISTRY.

AARON MARTIN HAGEMAN

#### VANDER POEL FELLOWSHIP IN CHEMISTRY.

EDWARD COLLIER SCOTT

## Undergraduate Honors.

### JUNIOR ORATORS.

#### CLASS OF 1913.

JACOB CHOB-RICHER	GEORGE STANLEY ROBINS
DONALD HAVENS	HAROLD WILLIAM SCHENCK
THOMAS VASSAR MORTON	HOMER LEWIS SHEFFER
JOHN HENRY STOWITTS PUTNAM	EARL REED SILVERS

### SOPHOMORE ORATORS.

#### CLASS OF 1914.

LEVI SIMMONS ERNST	JAMES ANDERSON MASON
JOHN EDWARD ELMENDORF, JR.	OREN FOGLE BROWNING, JR.
DUBOIS N. LEFEVRE	LABAN HAMILL CHAMBERLIN
CARL RAYMOND WOODWARD	JAMES MORROW

### HONOR MEN.

#### CLASS OF 1914.

A=A.B. Course.

L=Litt.B. Course.

G=General B.Sc. Course.

S=Technical B.Sc. Course

Kingsland Camp	A	Newark Academy
Franklin Oscar Church	S	Kingston Academy
Roscoe Seymour Conkling	S	Utica Free Academy
Lindley Gueren Cook	S	Madison High School
Robert Garton Dooling	S	Clayton High School
John Edward Elmendorf, Jr.	A	Rutgers Preparatory School
Levi Simmons Ernst	A	Catskill High School
Charles Henry Gant	S	Asbury Park High School
Donald Henry Gesse	S	Olean High School



## REPORT OF RUTGERS SCIENTIFIC SCHOOL.

Samuel Isaac Hoddeson	S	New Brunswick High School
Howard Frederick Huber	S	Woodbridge High School
William Terriberry Hulsizer	S	Clinton High School
Eric Waldorf Luster	S	Battin High School
Bryce Inglis MacDonald	S	Bound Brook High School
George Rockwell Maxson	S	Atlantic Highlands High School
Arthur Costello Metcalf	S	Passaic High School
James Morrow	A	Vineland High School
Edward Thurber Paxton	S	Freehold High School
Lloyd Frank Regendahl	S	Kingston Academy
David Bevier Van Dyck	A	Greenville Free Academy
Elmer Harnden Van Wagenen	S	Bordentown Military Institute
Louis Kossuth Wilkins	S	Woodbury High School
Carl Raymond Woodward	G	Freehold High School

### CLASS OF 1915.

Harry Newton Blue	S	Erasmus Hall High School
William Henry Campbell, Jr.	A	Ocean City High School
Charles Lee Crandall	S	Schuylerville High School
Elmore Johnson DeWitt	S	Steelton High School
Spencer Dawson Embree	S	Westfield High School
Russell Fleming	G	New Brunswick High School
Lawrence Growden Gillam	G	Mount Holly High School
John Calvin Green, Jr.	L	Hackettstown High School
Louis Norman Grier	S	Woodbury High School
Harold Thatcher Hoot	S	Newark High School
Ralph Moore Hubbard	S	Ridgewood High School
Lloyd North Lewis	S	Roselle Park High School
Robert Elwood Moore	A	Newark High School
George Dusenbery Norcom	S	Ocean City High School
Stanley Underwood North	S	Atlantic City High School
Bernard Pear	S	New Brunswick High School
William Solomon Porte	S	Reading Academy
Israel Reiner	S	Millville High School
Roy Mundy Davidson Richardson	A	Bound Brook High School
Franklin Morrow Ritchie	A	Erasmus Hall High School
Leo Rogin	S	New Brunswick High School
Frederic Kull Shield, Jr.	A	Chattle High School
Samuel Silbert	G	Plainfield High School
Laird Sumner Van Dyck	A	Newark High School
Selman Abraham Waksman	S	Odessa Gymnasium
Allen George Waller	S	Freehold High School

## Prizes Awarded, 1911-1912.

### SENIOR PRIZES.

James Suydam Prize in English Composition	}	Leroy Colver Wilsey
James Suydam Prize in Natural Science		Russell Woodworth Gies
Jacob Brodhead Classical Prize		Walter Sax Bloom
Edward A. Bowser Prize for Engineering Thesis	}	Walter Cox Bowen

## RUTGERS CADET CORPS.

Mrs. Ann Van Nest Bussing	} First	Valentine Britton Havens
Prizes for Extempore Speaking	} Second	George Edward Hagemann
Monsignor O'Grady Prizes for	} First	Valentine Britton Havens
Extempore Speaking	} Second	George Edward Hagemann
Class of 1876 Prize in Political Science		Seymour Parker Gilbert, Jr.
Theodore Frelinghuysen Vail Prize for		Seymour Parker Gilbert, Jr.
Scholarship		

### SENIOR AND JUNIOR PRIZES.

Joseph P. Bradley Prize in Roman Law		Seymour Parker Gilbert, Jr.
Rev. William H. Van Doren Prize for		George Edward Hagemann
Essay on Missions		
Luther Laffin Memorial Prizes	} First	Seymour Parker Gilbert, Jr.
in Mental Science	} Second	Homer Lewis Sheffer

### JUNIOR PRIZES.

Irving S. Upson Junior Orator Prizes	First	George Stanley Robins
	Second	John H. S. Putnam

### SOPHOMORE PRIZES.

Myron W. Smith Memorial	} First	Levi Simmons Ernst
Prizes in Oratory	} Second	John Edward Elmendorf, Jr.
Peter Spader Prizes in Modern	} First	Levi Simmons Ernst
History	} Second	James Morrow

### FRESHMAN PRIZES.

Tunis Quick Prize in English Grammar		
and Spelling		Laird Sumner Van Dyck
Samuel Sloan Prizes for	} First	Frederick Kull Shield, Jr.
Scholarship	} Second	Roy Mundy Davidson Richardson
Edward L. Barbour Prizes in	} First	Harry Newton Blue
Declamation	} Second	Harvey Ira Todd

### GENERAL PRIZES.

Louisa and Samuel Van Vechten Prize		
for Essay on Missions		George Edward Hagemann
Alliance Française Prize in French		Arthur Costello Metcalf
	} First	Seymour Parker Gilbert, Jr.
John P. Wall Targum Prizes	} Second	William Rudolph F. Stier
		Edward Thurber Paxton

## Rutgers College Cadet Corps, 1912-1913.

### COMMANDANT.

First Lieutenant A. E. Ahrends, U. S. Infantry

### FIELD AND STAFF.

Cadet Major, \_\_\_\_\_  
 Cadet Captain and Adjutant, T. T. Barr, Jr.  
 Cadet First Lieutenant and Quartermaster, O. F. Mitchell

# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

## NON-COMMISSIONED STAFF.

Cadet Sergeant Major, J. S. Elliott

Cadet Quartermaster Sergeant, J. A. Stackhouse

## CADET CAPTAINS.

Company A—W. C. Ball, Jr.

Company B—G. S. Robins

Company C—J. P. Hickman, Jr.

Company D—C. E. Dennis

## CADET FIRST LIEUTENANTS.

Company A—C. F. Schenck

Company B—T. Van Winkle

Company C—H. L. Van Mater

Company D—R. D. Howell

## CADET SECOND LIEUTENANTS.

Company A—H. F. Smith

Company B—J. B. Leslie

Company C—E. S. Grymes

Company D—R. E. Cooper

## ADDITIONAL CADET SECOND LIEUTENANTS.

Company A—P. Walrath

Company B—J. K. Folsom

## CADET FIRST SERGEANTS.

Company A—S. M. Firth

Company B—H. K. Davies

Company C—E. H. Van Wagenen

Company D—R. G. Dooling

## CADET SERGEANTS.

Company A—C. R. Woodward

H. Solomon

W. W. Summerill

G. R. Maxson

Company B—R. S. Conkling

J. A. Ward

E. W. Luster

R. P. Lukens

Company C—R. B. Anderson

F. L. Walton

W. T. Hulsizer

W. H. McCallum

Company D—F. O. Church

G. W. Schmidt

A. H. Baumann

J. Powers

## CADET CORPORALS.

Company A—C. R. Martin

A. C. Busch

W. D. Anner

H. V. Cory

A. R. Jacobson

H. B. Jackson

Company B—J. C. Conger

H. E. Watt

H. B. Smith

W. E. Schwanhauser

S. N. North

A. M. Schultz

Company C—W. H. Brandow

H. N. Blue

F. DeP. Hasbrouck

W. B. Malmar

H. J. Levine

W. S. Porte

S. D. Embree

Company D—W. D. Twing

G. D. Norcom

C. H. Engelhard

F. C. Brush

G. J. Smith

J. P. Noble

## REGISTER OF STUDENTS.

### COLOR GUARD.

Cadet Color Sergeant, F. N. Van Deripe, H. D. McKinney

### FIELD MUSIC.

Cadet Drum Major, H. A. Julie  
Cadet Chief Musician, F. E. Weis  
Cadet Principal Musician, L. J. Leonard

## Register of Students.

### GRADUATE STUDENTS.

Hageman, Aaron Martin	<i>Bound Brook</i>	27 Hertzog Hall
B.Sc., Rutgers College, 1912		
Vander Poel Fellow in Chemistry		
Scott, Edward Collier	<i>Oswego, N. Y.</i>	114 College Ave.
B.Sc., Rutgers College, 1912		
Vander Poel Fellow in Chemistry		

### SENIOR CLASS.

#### CLASS OF 1913.

A=A.B. Course.

L=Litt.B. Course.

G=General B.Sc. Course.

S=Technical B.Sc. Course.

Ball, William Carol, Jr.	S	<i>Rutherford</i>	114 College Ave.
Barr, Thomas Turner, Jr.	G	<i>Metuchen</i>	52 College Ave.
Bastedo, Walter	A	<i>Dayton</i>	Dayton
Bauer, Walter Charles	S	<i>Elizabeth</i>	542 George St.
Bell, Whitfield Jenks	S	<i>Hoboken</i>	78 College Ave.
Bergamini, Herbert Muhlenberg	G	<i>Brooklyn, N. Y.</i>	52 College Ave.
Bergen, Arthur DeLong	S	<i>Bound Brook</i>	542 George St.
Chase, Edward Dudley	S	<i>Rahway</i>	77 Hamilton St.
Chob-Richer, Jacob	A	<i>Newark</i>	Newark
Connors, Charles Henry	S	<i>Highland Park</i>	Highland Park
Conover, Frank Hayward	S	<i>Matawan</i>	122 Hamilton St.
Cook, Lester Emery	S	<i>Newark</i>	137 Winants Hall
Cooper, Ralph Emerson	G	<i>Newark</i>	95 College Ave.
Cozzens, Henry Anthony, Jr.	S	<i>Newark</i>	17 Mine St.
Davis, Louis Morris	S	<i>Bound Brook</i>	Bound Brook
Dennis, Clifford Ezekiel	G	<i>Hamburg</i>	95 College Ave.
Enk, John Clyde	A	<i>Somerville</i>	81 Winants Hall
Field, Frank Edwin	S	<i>Somerville</i>	81 Winants Hall
Flanagin, Francis Walter	G	<i>New Brunswick</i>	Highland Park
Folsom, Joseph Kirk	S	<i>Newark</i>	17 Mine St.
Grymes, Elmer Smith	S	<i>New Brunswick</i>	210 Handy St.
Haasis, Cuthbert Wead	S	<i>Rahway</i>	Rahway
Haasis, Paul Wead	S	<i>Rahway</i>	Rahway
Hambrock, Charles	S	<i>Newark</i>	140 Winants Hall
Havens, Donald Leston	L	<i>New Brunswick</i>	Bleecker Place

# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

Hegstrom, Carl Frederick Nicholas	S	<i>Perth Amboy</i>	108	Winants Hall
Hickman, John Parker, Jr.	S	<i>Asbury Park</i>	18	College Ave.
Hornbruch, Walter	S	<i>Elizabeth</i>	12	Winants Hall
Howell, Raymond Ditmars	G	<i>New Brunswick</i>	255	Suydam St.
Johnson, Frederick James	S	<i>Point Pleasant</i>	17	Mine St.
Julie, Howard Anthony	S	<i>Brooklyn, N. Y.</i>	18	College Ave.
Leistner, August	S	<i>Elizabeth</i>		Elizabeth
Lennox, Weston	S	<i>Vincentown</i>	55	Winants Hall
Leonard, Lambert Jenkins	S	<i>Highland, N. Y.</i>	39	Hertzog Hall
Leslie, Jesse Burgess	S	<i>Newark</i>		Bleecker Place
McKinney, Howard Decker	G	<i>Pine Bush, N. Y.</i>		Bleecker Place
Masker, Claremont Whitmee	S	<i>Somerville</i>	81	Winants Hall
Merrill, George Raymond	S	<i>Washington</i>	122	Hamilton St.
Miller, Charles	S	<i>Somerville</i>	12	Hertzog Hall
Milliken, Mahlon George	S	<i>Bloomfield</i>	78	College Ave.
Mitchell, Oliver Fritts	S	<i>Pittstown</i>	70	Winants Hall
Morton, Thomas Vassar	G	<i>Newark</i>	17	Mine St.
Nelson, Thurlow Christian	S	<i>New Brunswick</i>		Highland Park
Newmark, Herman Albert	G	<i>Newark</i>		Newark
Obeeny, Joseph S.	S	<i>Brooklyn, N. Y.</i>	17	Winants Hall
Opdycke, Lawrence Hall	S	<i>West New York</i>	77	Hamilton St.
Putnam, John Henry Stowits	A	<i>St. Johnsville, N. Y.</i>		Bleecker Place
Ramsey, George Herbert	A	<i>Olean, N. Y.</i>	52	College Ave.
Robins, George Stanley	S	<i>Plainfield</i>		Bleecker Place
Robinson, George Raymond	S	<i>Moorestown</i>	122	Hamilton St.
Ross, Miles	A	<i>New Brunswick</i>	100	Livingston Ave.
Rundall, Olin Rutledge	S	<i>Amenia, N. Y.</i>	17	Winants Hall
Schechter, Morris	S	<i>Newark</i>		Newark
Schenck, Cornelius Frelinghuysen	S	<i>Plainfield</i>		Bleecker Place
Schenck, Harold William	A	<i>Plainfield</i>	29	Hertzog Hall
Sharkey, Samuel Miller	S	<i>Trenton</i>	52	College Ave.
Sheffer, Homer Lewis	A	<i>Lanlithgo, N. Y.</i>	30	Hertzog Hall
Silvers, Earl Reed	A	<i>Rahway</i>	77	Hamilton St.
Slater, James Rodenburg	G	<i>Cairo, N. Y.</i>	124	Winants Hall
Smith, Edward Tiel	G	<i>Magnolia</i>	95	College Ave.
Smith, Hilmar Frederick	S	<i>New Brunswick</i>	157	College Ave.
Smith, Thomas Darmon	S	<i>Milford</i>	336	George St.
Stover, Charles Coane	G	<i>Trenton</i>		Bleecker Place
Titus, Charles Augustus	G	<i>New Brunswick</i>	178	Townsend St.
Van Deripe, Frederick Neefus	S	<i>New Brunswick</i>	145	Somerset St.
Van Mater, Henry Lear	S	<i>New Brunswick</i>		Highland Park
Van Winkle, Theodore	S	<i>Rutherford</i>	52	College Ave.
Walrath, Paul	S	<i>Newark</i>		Bleecker Place
Weis, Francis Elmer	G	<i>Trenton</i>	122	Hamilton St.

## JUNIOR CLASS.

### CLASS OF 1914.

A=A.B. Course.

L=Litt.B. Course.

G=General B.Sc. Course.

S=Technical B.Sc. Course

Allen, Harry Milton	S	<i>Sergeantsville</i>	542	George St.
Anderson, Roy Bennett	S	<i>Brooklyn</i>	77	Hamilton St.
Baumann, Adolph Hora	S	<i>Rahway</i>	18	College Ave.
Bechtel, George Milne	S	<i>Trenton</i>	95	College Ave.
Beckwith, Charles Stewart	S	<i>Olean, N. Y.</i>	55	Winants Hall
Blanchard, Frank DeWitt	A	<i>Paterson</i>	43	Hertzog Hall



# REGISTER OF STUDENTS.

Bouton, Robert Ogden	G	<i>Elizabeth</i>	95 College Ave.
Brill, Edward Hopkins	S	<i>Poughquag, N. Y.</i>	Bleecker Place
Browning, Oren Fogle, Jr.	L	<i>Perth Amboy</i>	77 Hamilton St.
Buechner, Casper	S	<i>Woodhaven, N. Y.</i>	137 Winants Hall
Camp, Kingsland	A	<i>Newark</i>	Newark
Chamberlin, Laban Hammill	A	<i>New Brunswick</i>	267 Handy St.
Church, Franklin Oscar	S	<i>High Falls, N. Y.</i>	Bleecker Place
Conklin, Theodore Hill	A	<i>Kingston, N. Y.</i>	52 College Ave.
Conkling, Roscoe Seymour	S	<i>Utica, N. Y.</i>	78 College Ave.
Cook, Lindley Gueren	S	<i>Madison</i>	Madison
Cooper, Samuel Charles	S	<i>Elizabeth</i>	Elizabeth
Crane, Edward Jameson	S	<i>South Amboy</i>	124 Winants Hall
Davies, Henry Kattenhorn	S	<i>Brooklyn, N. Y.</i>	18 College Ave.
de la Torre, Austin Lino	S	<i>Guadalajara, Mex.</i>	Bleecker Place
Dickerson, Rawson Parkhurst	S	<i>Newark</i>	Bleecker Place
Dooling, Robert Garton	S	<i>Clayton</i>	77 Hamilton St.
Elliott, John Sanderson	S	<i>Catskill, N. Y.</i>	1 <sup>st</sup> College Ave.
Elmendorf, John Edward, Jr.	A	<i>New Brunswick</i>	15 Union St.
Ernst, Levi Simmons	A	<i>Catskill, N. Y.</i>	58 Winants Hall
Finegan, John Thomas	S	<i>Iselin</i>	Iselin
Firth, Stuart Mortimer	S	<i>South Orange</i>	114 College Ave.
Gaipa, Alfred August	A	<i>Jersey City</i>	122 Hamilton St.
Gant, Charles Henry	S	<i>Bradley Beach</i>	17 Mine St.
Gesse, Donald Henry	S	<i>Olean, N. Y.</i>	52 College Ave.
Hallenbeck, Charles Arlington	A	<i>Greenville, N. Y.</i>	30 Hertzog Hall
Hoddeson, Samuel Isaac	S	<i>New Brunswick</i>	233 Burnet St.
Huber, Howard Frederick	S	<i>Woodbridge</i>	Woodbridge
Hulsizer, William Terriberry	S	<i>Clinton</i>	70 Winants Hall
Laity, Warren Randolph	G	<i>Chappaqua, N. Y.</i>	105 Winants Hall
Leeds, Albert George	A	<i>Brooklyn, N. Y.</i>	Bleecker Place
LeFevre, Dubois N.	A	<i>New Paltz, N. Y.</i>	41 Hertzog Hall
Lowery, John, Jr.	S	<i>Liberty Corner</i>	542 George St.
Lukens, Reginald Pennington	S	<i>Rahway</i>	17 Mine St.
Luster, Eric Waldorf	S	<i>Elizabeth</i>	95 College Ave.
MacDonald, Bryce Inglis	S	<i>Belle Mead</i>	23 Winants Hall
McCallum, William Henry	S	<i>Rahway</i>	122 Hamilton St.
Maxson, George Rockwell	S	<i>Locust</i>	102 Winants Hall
Menagh, Louis Randolph, Jr.	G	<i>Jersey City</i>	95 Bayard St.
Mershon, Arthur Hartland	L	<i>Rahway</i>	Rahway
Metcalf, Arthur Costello	G	<i>Passaic</i>	26 Winants Hall
Morrow, James	A	<i>Vineland</i>	99 Winants Hall
Paxton, Edward Thurber	S	<i>Freehold</i>	102 Winants Hall
Powers, Jerome	S	<i>Elizabeth</i>	Elizabeth
Prentiss, Arthur Arnold	G	<i>New Brunswick</i>	Highland Park
Prentiss, Paul Dudley	A	<i>New Brunswick</i>	Highland Park
Purrrington, Thomas Upton	S	<i>Trenton</i>	18 College Ave.
Regendahl, Lloyd Frank	S	<i>Kingston, N. Y.</i>	78 College Ave.
Rowland, John Henry	S	<i>New Brunswick</i>	206 Commercial Ave.
Schmid, Edward Robert	S	<i>Verona</i>	58 Winants Hall
Schmidt, George William	S	<i>Arlington</i>	17 Mine St.
Simon, Herbert	S	<i>Newark</i>	Newark
Solomon, Harold	S	<i>New Brunswick</i>	189 New St.
Stackhouse, James Archer	S	<i>Bridgeton</i>	122 Hamilton St.
Summerill, William Webber	S	<i>Penns Grove</i>	542 George St.
Thorburn, Theodorus McLeod	A	<i>Clifton</i>	102 Winants Hall
Van Dyck, David Bevier	A	<i>Greenville, N. Y.</i>	Bleecker Place
Van Wagenen, Elmer Harnden	S	<i>Brooklyn, N. Y.</i>	31 Winants Hall

# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

Walton, Frank Large	S	Springfield	18 College Ave.
Ward, Joseph Augustus	S	Lakewood	26 Winants Hall
Wilkins, Louis Kossuth	S	Thorofare	94 Guilden St.
Williams, Stanley Neale	S	Westfield	70 Winants Hall
Woodward, Carl Raymond	G	Englishtown	542 George St.
Zeglio, Leon Peter	S	Plainfield	23 Winants Hall

## SOPHOMORE CLASS.

### CLASS OF 1915.

A=A.B. Course.

L=Litt.B. Course.

G=General B.Sc. Course.

S=Technical B.Sc. Course.

Anner, Walter	S	Phillipsburg	542 George St.
Ashman, Richard	A	Hunt'gton, N. Y.	105 Winants Hall
Blue, Harry Newton	S	New Brunswick	19 Morris St.
Brandow, William Henry	S	Albany, N. Y.	114 College Ave.
Brush, Frederick Clinton	S	Westfield	114 College Ave.
Bulmer, James Wesley	G	Cairo, N. Y.	11 Hardenbergh St.
Busch, Arthur Clifford	G	Brooklyn, N. Y.	95 College Ave.
Campbell, William Henry, Jr.	A	Ocean City	122 Hamilton St.
Chittick, Murray Appleby	S	Old Bridge	Old Bridge
Conger, John Conklin	S	New Brunswick	62 New St.
Conover, Charles Boice	S	New Brunswick	R. F. D. No. 2
Corbin, Eliot Payson	G	Oxford, N. Y.	77 Hamilton St.
Cory, Horace Van DerVeer	S	Freehold	144 College Ave.
Crandall, Charles Lee	S	Schuylerville, N. Y.	113 Winants Hall
Crowe, DuPlessis Helm	S	Edgewater	15 Winants Hall
Cummings, Douglas	S	East Orange	114 College Ave.
DeWitt, Elmore Johnson	S	Jersey City	2 Winants Hall
Embree, Spencer Dawson	S	Westfield	77 Hamilton St.
Engelhard, Charles Howard	S	Plainfield	84 College Ave.
Fleming, Russell	G	New Brunswick	254 Hamilton St.
Folensbee, Bradley Jacob	A	Schenectady, N. Y.	43 Hertzog Hall
French, Joseph Russell	S	Moorestown	122 Hamilton St.
Friedman, Joseph	S	New Brunswick	298 Burnet St.
Furman, Benjamin Applegate	S	East Orange	East Orange
Gillam, Lawrence Growden	S	Mt. Holly	18 College Ave.
Green, John Calvin, Jr.	L	Hackettstown	63 Winants Hall
Grier, Louis Norman	S	Sewell	97 Winants Hall
Handford, James LeRoy	A	Vineland	122 Hamilton St.
Harker, Mahlon Lee	S	New Brunswick	52 College Ave.
Hervey, George Washington	S	Kingston, N. Y.	78 College Ave.
Hoot, Harold Thatcher	S	Corona, N. Y.	66 Winants Hall
Howell, J. Bertram	G	Newark	2 Winants Hall
Howlett, Ned Orlando	S	New Brunswick	255 Suydam St.
Hubbard, Ralph Moore	S	Basking Ridge	542 George St.
HasBrouck, Ferdinand DePuy	S	Allendale	17 Mine St.
Hunt, Russell Woolston	S	Westfield	Westfield
Jackson, Harry Benjamin	S	Plainfield	78 College Ave.
Jacobsen, Alvin Ralph	S	Perth Amboy	Perth Amboy
Kerr, Joseph	S	Elizabeth	95 College Ave.
Kuhn, Emerich John	S	Rahway	Rahway
Kuntz, Arthur	S	Iselin	Iselin
Langwith, Frank Alvin, Jr.	A	Oceanport	25 Hertzog Hall
Leeds, Marvin	S	Atlantic City	73 Winants Hall

# REGISTER OF STUDENTS.

Levine, Herman	S	New Brunswick	218 Burnet St.
Lewis, Lloyd North	S	Roselle Park	542 George St.
McCloskey, Warren Durward	A	Point Pleasant	17 Mine St.
Malmar, Ward Brewster	S	Brooklyn, N. Y.	77 Hamilton St.
Mandel, Samuel	S	Newark	61 Winants Hall
Martin, Charles Raymond	S	Bloomfield	542 George St.
Martin, Louis Wright	S	Metuchen	Metuchen
Massopust, Joseph Francis	G	Perth Amboy	Perth Amboy
Mercker, Albert Eric	S	Jersey City	34 Winants Hall
Murray, Lester Donald	A	Jersey City	Jersey City
Noble, John Page	S	Olean, N. Y.	52 College Ave.
Norcom, George Dusenbery	S	Ocean City	98 Winants Hall
North, Stanley Underwood	S	Pleasantville	52 College Ave.
Pear, Bernard	S	New Brunswick	1 King Block
Porte, William Solomon	S	Stockton	97 Winants Hall
Reiner, Israel	S	Woodbine	437 George St.
Richardson, Roy Mundy Davidson	A	Bound Brook	Bleecker Place
Ritchie, Franklin Morrow	A	Brooklyn, N. Y.	17 Mine St.
Ritter, Philip, Jr.	G	Brooklyn, N. Y.	17 Mine St.
Rogin, Leo	S	New Brunswick	New Brunswick
Rose, Ime Morris	S	Bound Brook	Bound Brook
Sahn, Samuel Luther	S	New Brunswick	139 Neilson St.
Savitz, Russel Joseph	S	Westfield	114 College Ave.
Schlotterer, George Herman, Jr.	S	Elizabeth	Elizabeth
Schultz, Albert Martin	G	Arlington	17 Mine St.
Schwanhausser, Walter Emil	S	Jersey City	34 Winants Hall
Searle, Raymond Bovey	A	New Brunswick	Seminary Place
Searle, Robert Wyckoff	A	New Brunswick	Seminary Place
Sfarra, Alfred Frederick William	S	Bound Brook	Bound Brook
Shield, Frederick Kull, Jr.	A	New Brunswick	17 Mine St.
Shultz, George Leslie	S	Jamesburg	Jamesburg
Silbert, Samuel	S	Plainfield	84 College Ave.
Smith, George Joseph	S	New York, N. Y.	52 College Ave.
Smith, Harry Brokaw	S	North Plainfield	78 College Ave.
Stang, William Henry	S	New Brunswick	125 Somerset St.
Stanton, Irving Berkeley	S	Bayonne	Bayonne
Steedle, Elroy Wilson	S	Riverton	122 Hamilton St.
Stier, Robert Frederick Emanuel	S	Sayreville	66 Winants Hall
Sullivan, Theodore Green, Jr.	S	Stelton	95 College Ave.
Thomson, Milton Amos	S	New Kingston, N. Y.	Middlebush
Thomson, Ralph William	G	Middlebush	Middlebush
Todd, Harvey Ira	A	Hyde Park, N. Y.	12 Hertzog Hall
Todd, Ralph Ten Broeck	A	Tarrytown, N. Y.	77 Hamilton St.
Toohey, John Peter	S	Newburgh, N. Y.	122 Hamilton St.
Twing, Wainwright Darrow	S	Riverside	122 Hamilton St.
Van Dyck, Laird Sumner	A	Newark	77 Hamilton St.
Van Liew, Harold Wesley	S	New Brunswick	337 Townsend St.
Voorhees, Theodore	A	New Brunswick	Landing Lane
Waksman, Selman Abraham	S	Metuchen	Metuchen
Wallace, Aaron	A	Elizabeth	Elizabeth
Waller, Allen George	S	Freehold	113 Winants Hall
Warne, Ronson J.	S	Matavan	122 Hamilton St.
Watson, Asher Dudley	L	New Brunswick	17 Hardenbergh St.
Watt, Harry Edward	S	Hamburg	73 Winants Hall
Wheat, Charles Conkling	A	Liberty Corner	65 Winants Hall
Whyman, Edward	A	Elizabeth	Elizabeth

# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

## FRESHMAN CLASS.

CLASS OF 1916.

A=A.B. Course.

L=Litt.B. Course.

G=General B.Sc. Course.

S=Technical B.Sc. Course.

		<i>Rahway</i>	<i>Rahway</i>
Acken, Ronald Gordon	G	<i>Rahway</i>	87 Winants Hall
Ainsworth, William Penn	Esterbrook	<i>Newton</i>	Bleecker Place
Armstrong, Obadiah Pellet	S	<i>Asbury Park</i>	110 Winants Hall
Atchley, Donald Brothwell	G	<i>Caldwell</i>	114 College Ave.
Austin, Raymond Munkittrick	G	<i>Elizabeth</i>	52 College Ave.
Baer, William Whitaker	G	<i>Bloomingtondale</i>	Rahway
Ball, Edward Minton	G	<i>Germantown, Pa.</i>	130 Winants Hall
Bell, Charles Edward	S	<i>New York, N. Y.</i>	118 Winants Hall
Benjamin, Charles Egbert	G	<i>Brooklyn, N. Y.</i>	114 College Ave.
Bevier, Richard B.	S	<i>Elizabeth</i>	Elizabeth
Bowles, William Henry	S	<i>East Orange</i>	98 Easton Ave.
Boyer, Arthur Leslie	G	<i>Saugerties, N. Y.</i>	78 College Ave.
Brainard, William A.	S	<i>New York, N. Y.</i>	52 College Ave.
Braine, Laurence Fulton, Jr.	S	<i>Paterson</i>	78 College Ave.
Braun, Christian William	G	<i>Perth Amboy</i>	77 Hamilton St.
Browning, Dudley Barnitz	A	<i>Elizabeth</i>	110 Winants Hall
Buck, George Herman	S	<i>Hudson, N. Y.</i>	17 Mine St.
Buckman, Guy Foster	S	<i>Painesville, O.</i>	18 College Ave.
Buell, Darwin Burton	A	<i>Germantown, Pa.</i>	130 Winants Hall
Closson, James Harwood, Jr.	L	<i>Asbury Park</i>	17 Mine St.
Coleman, James Melville	G	<i>Bayonne</i>	Bayonne
Colville, Clifford James	S	<i>Newark</i>	135 Winants Hall
Conklin, Sherman Lindsley	A	<i>Somerville</i>	14 Hertzog Hall
Cranmer, Clarkson Atwood	A	<i>Newark</i>	146 Winants Hall
Drill, Max	S	<i>Ridgewood</i>	78 College Ave.
Dunlop, Wallace	S	<i>Hartford, Conn.</i>	16 Winants Hall
Elliott, Robert Walter, Jr.	L	<i>Kingston, N. Y.</i>	542 George St.
Elmendorf, Tracy Lake	S	<i>Port Even, N. Y.</i>	78 College Ave.
Elsworth, Roscoe Van Aken	L	<i>White Plains, N. Y.</i>	77 Hamilton St.
Farley, Walter Van Horne	S	<i>Highland Park</i>	747 Raritan Ave.
Fisher, Adrain	S	<i>New Brunswick</i>	161 Livingston Ave.
Florance, Edwin	G	<i>Newark</i>	Newark
Furst, Toby	A	<i>Plainfield</i>	30 Winants Hall
Gates, Roy William	S	<i>Wyoming, N. Y.</i>	77 Hamilton St.
Gay, William Louis	G	<i>Newark</i>	Newark
Gittleman, Louis Benjamin	G	<i>Paterson</i>	77 Winants Hall
Haenichen, Karl Frederick	S	<i>Elizabeth</i>	Elizabeth
Haley, Herbert Francis	S	<i>Somerville</i>	Somerville
Halstead, Harold Norman	S	<i>Keyport</i>	118 Winants Hall
Hand, Donald Dunstan	A	<i>Onakertown, Pa.</i>	95 Bavard St.
Haney, Paul Sigafos	A	<i>West New York</i>	134 Winants Hall
Hannas, Ralston Raymond	S	<i>Walden, N. Y.</i>	144 Winants Hall
Hartley, George Russell	G	<i>Asbury Park</i>	17 Mine St.
Hayes, J. Harry	G	<i>New York, N. Y.</i>	30 Winants Hall
Helmrich, Arthur Edward	S	<i>Brooklyn, N. Y.</i>	98 Winants Hall
Herrmann, Edgar George	S	<i>Hurley, N. Y.</i>	29 Hertzog Hall
Hiller, Richard Bevier	S	<i>Brooklyn, N. Y.</i>	52 College Ave.
Horn, Stanley Irving	S	<i>Elizabeth</i>	Elizabeth
Hruby, Charles	S	<i>Manasquan</i>	145 Winants Hall
Hulsart, Robert Pearce	S		



# REGISTER OF STUDENTS.

Huntington, J. Henry 3rd	G	Newark	90	Winants Hall
Hurley, Edgar Thomas	S	Baldwin, L.I., N.Y.	143	Winants Hall
Hutchinson, William Thomas	S	Freehold	542	George St.
Huttenloch, George Moyer	S	Montclair	78	College Ave.
Ingham, Edward Stebbins	A	New Brunswick	26	Union St.
James, Paul Case	S	Shokan, N. Y.	31	Hertzog Hall
Janeway, Harry Latimer	L	New Brunswick	17	Livingston Ave.
Jenkins, Dean Carter	S	Dover	114	College Ave.
Jennings, Harry Lockwood	S	Hartford, Conn.	16	Hertzog Hall
Kalteissen, Klemmer	G	New Brunswick	126	College Ave.
Kille, Harris Torbert	S	Swedesboro	94	Guilden St.
Komp, William H. Wood	G	Rutherford	114	College Ave.
Kloepfel, Wallace Warren	A	Brooklyn, N. Y.	32	Hertzog Hall
Kreh, Albert	S	Elizabeth		Elizabeth
Kroemmelbein, Walter Fred	S	Elizabeth		Elizabeth
Lee, Linwood Lawrence	S	Trenton	122	Hamilton St.
Lewis, Arthur Robert	A	Newark	121	Winants Hall
Lincoln, Adrian Courtney	S	Bayonne		Bayonne
Losee, Edwin Lamb	G	Up. Red Hook, N. Y.	39	College Ave.
MacClary, Earl	S	Rahway	87	Winants Hall
Mackenzie, Malcolm	S	Flushing, N. Y.	78	College Ave.
McLaughlin, Clifford Anthony	L	New Brunswick	336	George St.
McMichael, Robert Evlyn	S	Freehold		Freehold
Magens, Garrett Berry	S	Lansdowne, Pa.	77	Hamilton St.
Mann, Harvey	L	Perth Amboy		Perth Amboy
Martin, Robert Van Emburg	S	Hasbrouck Heights	40	Winants Hall
Meisel, Erwin Lawrence	S	Springfield	134	Winants Hall
Miller, Julian Francis	S	Camden	109	Winants Hall
Minton, Adrian Coley	A	Red Bank	62	Winants Hall
Molineux, Edward Leslie, Jr.	S	Metuchen		Metuchen
Monteith, John	S	Stanley	116	Winants Hall
Morey, Clarence Albert	G	Nunda, N. Y.	4	Union St.
Mulligan, James Eugene	L	Newark		Newark
Noriega, Manuel	S	Mexico City, Mex.	78	Winants Hall
Payne, William Warren	S	Philmont, N. Y.	121	Winants Hall
Peppel, Edward Louis	L	Newark		Newark
Plusch, Harold Frederick	G	Catskill, N. Y.	121	Winants Hall
Post, Clifford Frederick	G	Port Jervis, N. Y.	29	Winants Hall
Ratner, Joseph	S	New Brunswick		Highland Park
Raven, Anton Adolph, Jr.	A	New Brunswick	185	College Ave.
Reed, Charles Harold	S	New Brunswick	207	Redmond St.
Reese, Walter Dilts	S	Westfield	114	College Ave.
Richardson, William Thaddeus	S	Catskill, N. Y.	18	College Ave.
Rockafeller, Eugene Francis	G	Asbury Park	95	College Ave.
Rockafeller, Harry Joseph, Jr.	G	Asbury Park	95	College Ave.
Roebing, Paul	A	Bernardsville	110	Winants Hall
Roesch, George Bancroft	S	Bloomfield	1	Winants Hall
Romeike, Georges Dayez	G	New York, N. Y.	18	College Ave.
Rosen, Theodore	G	Carmel	76	Winants Hall
Scarr, James Bernard	G	Hasbrouck Heights	40	Winants Hall
Schanze, Charles Edwin	S	Newark	18	College Ave.
Scharring-Hausen, Robert Louis	S	Newark	90	Winants Hall
Schenck, Lawrence Wilson	S	Atlantic City	78	Winants Hall
Schmidt, David	S	Yorktown, Va.	66	Winants Hall
Schoonmaker, Ellis Harold	S	Hasbrouck Heights	43	Winants Hall
Schure, William Adolph, Jr.	S	Bound Brook	542	George St.



# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

Segur, Herbert Crittenden	G	Dover	95 College Ave.
Seidman, Herbert Walter	S	New Brunswick	College Farm
Seiler, Ralph George	S	Elizabeth	95 College Ave.
Sharp, Lawrence Willis	S	Sea Isle City	16 Winants Hall
Shield, Lansing Porter	A	New Brunswick	Highland Park
Sloane, Harry	S	New Brunswick	57 Morris St.
Smaney, Edward Paul	S	Roselle	Roselle
Smith, Theodore Howard	S	Kingston, N. Y.	542 George St.
Sprague, William Smith	G	Barneget	43 Winants Hall
Strohl, Raymond	S	Elizabeth	Elizabeth
Succop, David Carle	S	Pittsburgh, Pa.	78 College Ave.
Talman, Howard Parker	S	Spring Valley, N. Y.	95 College Ave.
Taylor, Eugene Richmond	S	Salem	117 Winants Hall
Taylor, Lewis Jerome	G	Asbury Park	95 College Ave.
Thomas, Benjamin Edmund	G	Bound Brook	Bound Brook
Thompson, Herbert Addison	S	Olean, N. Y.	78 College Ave.
Ulrich, Frederick John	S	Haledon	122 Hamilton St.
Van Middlesworth, John	S	Middlebush	Middlebush
Voorhees, Frederic	A	New Brunswick	Bishop Place
Voorhees, John Schenck	S	New Brunswick	Bishop Place
Voorhees, Ralph Whitaker	A	New York, N. Y.	32 Hertzog Hall
Watman, Albert	S	Bayonne	Church cor. Neilson St.
Wells, William Chester, Jr.	L	Bound Brook	Bound Brook
Wendel, Hugo Otto	A	Linden	Linden
West, Paul Sandt	G	Asbury Park	17 Mine St.
Whisler, George Henry	A	Newark	33 Hertzog Hall
White, Ralph Pollock	G	New Brunswick	Easton Ave.
Wiemer, Otto Edward	G	Rahway	Rahway
Willever, Earl Strouse	S	Belvidere	542 George St.
Wolff, Frederick Willard	G	New Brunswick	Highland Park
Wood, Walter Klemmer	S	New Brunswick	208 Redmond St.
Zass, Joseph Samuel	G	Woodbine	142 Winants Hall

## SPECIAL STUDENTS.

### NOT CANDIDATES FOR A DEGREE.

(A indicates Classical School. S indicates Scientific School.)

Heines, John Cornelius	A	Paterson	29 Hertzog Hall
Skillman, William Edgar	S	Brooklyn, N. Y.	17 Mine St.

## SUMMARY.

Graduate Students	2
Seniors, Class of 1913	69
Juniors, Class of 1914	69
Sophomores, Class of 1915	99
Freshmen, Class of 1916	138
Special Students	2
Total	379

# REGISTER OF STUDENTS.

## SHORT COURSES IN AGRICULTURE.

### STUDENTS 1912-1913.

G=Course in General Agriculture and Dairy Farming.

F=Course in Fruit Growing and Market Gardening.

P=Course in Poultry Husbandry.

H=Course in Home Economics.

Acken, Amy	H	Metuchen	Metuchen
Ayers, Ellis Henry	P	Metuchen	Metuchen
Baldwin, Elbert Stephen	P	Denville	5 Winants Hall
Baldwin, Ralph Craig	G	Montclair	28 Redmond St.
Bassett, Herbert Townsend	G	Salem	18 Jones Ave.
Beam, Edward	G	Paterson	47 Bayard St.
A.B., Brown University			
Benson, Jacob	F	Woodbine	56 New St.
Blackledge, Benjamin Franklin	G	Hackensack	50 Welton St.
Bloom, George Maxwell	P	Juliustown	204 Commercial Ave.
Boggs, George Painter, Jr.	F	Barnsboro	54 Baldwin St.
Boulger, Rita Rosina	H	New Brunswick	272 George St.
Breese, William Clark	G	Jersey City	168 George St.
Brodix, John Weedman	G	Jobstown	Jobstown
A.B., Columbia			
Burtis, John Carroll	F	Allentown	52 Bishop St.
Cahill, Arthur Joseph	G	Jersey City	168 George St.
Chapman, Ada May	F	Westfield	The Bayard
Clark, Elizabeth de la Cour	H	Moorestown	The Bayard
Clark, Irving Wayne	F	Moorestown	The Bayard
C.E., Princeton			
Claypoole, Clarence Leroy	G	Vineland	50 Welton St.
Cole, Ada Louise	H	New Brunswick	267 George St.
Collins, Thomas Roger	G	Livingston	22 Louis St.
Combs, Isaac, Jr.	F	Livingston	273 George St.
Cook, Robert G.	P	Atl. Highl'ds	83 Commercial Ave.
Cooke, Warren Emily	G	Mount Royal	131 Townsend St.
Cowperthwait, Charles Coles	G	Medford	193 George St.
Crane, William Asher	F	Caldwell	18 Jones Ave.
Davis, George Leon	G	Bridgeton	208 Commercial Ave.
Davis, Thomas Weatherby	G	Woodstown	50 Welton St.
DeHart, Sidney Isaac	G	Belle Mead	304 Townsend St.
Dick, Langhorne Bullitt	G	Philadelphia, Pa.	Philadelphia
Doggett, Allen Barrows, Jr.	F	Englishtown	26 Redmond St.
A.B., Dartmouth			
DuBois, Hugh Ellison	G	Montclair	45 Baldwin St.
Durell, Marian	F	Lawrenceville	Delevan St.
B.A., Wellesley			
Durell, Thomas Jackson	G	Belle Plain	Delevan St.
A.B., Princeton			
Dye, Frank	G	Ridgewood	Nichol Ave.
Earl, Howard I.	F	Elizabeth	Elizabeth
Eaton, Isabella Russell	P	Washington, D. C.	45 Delevan St.
Eble, Harold Albert	P	East Orange	29 Morris St.
Eickhoff, Osmer Wenzel	G	Hackensack	3 Elm Row
Ellis, Charles Walter	P	Paterson	60 Baldwin St.
Emken, Wilhelmine	P	Jersey City	190 George St.
Erlandson, George Eric	F	Paterson	69 New St.

# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

Falke, Paul	G	<i>Pompton Plains</i>	216 Seaman St.
Fick, Harold Rapelye	G	<i>New Brunswick</i>	116 Livingston Ave.
Fink, George Andrew	G	<i>Guttenberg</i>	140 George St.
Finley, Warren Birt	G	<i>Bridgeton</i>	196 George St.
Fischer, Adelbert Frank	G	<i>Newark</i>	87 Hassart St.
Fischer, Robert Daniel	F	<i>Milltown</i>	Milltown
Fisher, Linn Allen	G	<i>Houses</i>	35 Oliver St.
Fretz, Leo Hasleden	G	<i>Cedar Grove</i>	542 George St.
Fund, August William	G	<i>Livingston</i>	22 Louis St.
Garcia, Jose	F	<i>New Brunswick</i>	George St.
Gilmore, Edgar Schermerhorn	G	<i>East Orange</i>	Mansion House
Godfrey, Harold Edwin	F	<i>Morristown</i>	173 George St.
Greer, Thomas Anderson	G	<i>Brooklyn, N. Y.</i>	Brooklyn
Groth, Mathilde	P	<i>Highland Park</i>	Highland Park
Gustafson, John Walter	F	<i>Jersey City</i>	111 Bayard St.
Halprin, Morris Arthur	F	<i>New Brunswick</i>	College Farm
Hampton, Julius Diemer	G	<i>Pemberton</i>	26 Codwise Ave.
Hedden, Fred	F	<i>Dover</i>	56 Bishop St.
Hendershot, Louis	G	<i>Newton</i>	56 Bishop St.
Hendrickson, John Griffith	G	<i>Princeton</i>	Princeton
Hendrickson, William Tilton	G	<i>Freehold</i>	52 Bishop St.
Holson, Lois Bowman	P	<i>Mount Holly</i>	5 Neilson St.
Hope, Harold Hudson	F	<i>Madison</i>	Jones Ave.
Janeway, Mary Alison	H	<i>New Brunswick</i>	17 Livingston Ave.
Johnson, John August	G	<i>Dover</i>	142 George St.
Johnston, Herbert Rapelye	G	<i>New Bruns'k</i>	116 Livingston Ave.
Jones, Budd McKinley	G	<i>Blairstown</i>	30 Comstock St.
Julie, Roy Emil	F	<i>Brooklyn, N. Y.</i>	18 College Ave.
Kaufold, Ernest Henry	G	<i>Brooklyn, N. Y.</i>	45 Baldwin St.
Katcher, Rose	H	<i>Flemington</i>	55 Commercial Ave.
Kessler, Bertram Joseph	F	<i>Jersey City</i>	131 Townsend St.
Kirby, Amos	F	<i>Mullica Hill</i>	50 Welton St.
Koeller, Alfred Herbert Charles	F	<i>Ridgefield Park</i>	168 George St.
Leach, Phineas Bommer	G	<i>Park Ridge</i>	168 George St.
Le Boutillier, Clement	G	<i>High Bridge</i>	51 Comstock St.
Ph.B., Columbia			
Leibe, Augustus Charles	P	<i>Bound Brook</i>	Bound Brook
Lewis, Chester	G	<i>Woodcliff Lake</i>	168 George St.
Lindsay, Thomas	P	<i>Plainfield</i>	275 George St.
Long, Thomas Ware	G	<i>Essex Fells</i>	23 Jones Ave.
Lott, Ralph Bacon	G	<i>Bridgeton</i>	90 Commercial Ave.
McBean, Archibald Forschel	G	<i>Springfield</i>	Springfield
McCaffrey, Francis Joseph	G	<i>New York, N. Y.</i>	293 Redmond St.
McCaffrey, Josefina Jorrin	H	<i>New York, N. Y.</i>	293 Redmond St.
McCaffrey, Raymond James	G	<i>Pensauken,</i>	204 Commercial Ave.
McChesney, Watson John	G	<i>Jamesburg</i>	Nichol Ave.
McDonald, Frank Aloysius	G	<i>Hackettstown</i>	273 George St.
McNair, Wilson Day	P	<i>Herndon, Va.</i>	45 Baldwin St.
MacMonnies, Wallace	F	<i>Westfield</i>	140 George St.
MacFarlan, Reuben	G	<i>Hawthorne</i>	35 Oliver St.
MacLachlan, Margaret	H	<i>Metuchen</i>	Metuchen
Madge, Harry Silas	G	<i>Freehold</i>	52 Bishop St.
Magill, Samuel James	G	<i>Audubon</i>	216 Seaman St.
Martin, Frank Edward	F	<i>Morristown</i>	173 George St.
Maxwell, Donald Gerard	G	<i>Westfield</i>	56 Bishop St.
Maybaum, Paul Stein	P	<i>Newark</i>	142 George St.

# REGISTER OF STUDENTS.

Mayo, Guy Eaton	G	New Brunswick	216 Redmond St.
Merrill, Leavitt King, Jr.	P	New York, N. Y.	56 New St.
Meseroll, Elwood Irving	F	New Brunswick	New Brunswick
Miller, Anna Mae	H	Somerville	Somerville
Moon, Francis Morton	F	Edgewater	42 Baldwin St.
Moreau, Frank Jones	F	Freehold	193 George St.
Morey, Wm. Eugene	P	Princeton	216 Seaman St.
Ortholf, Walter Frederick	G	Belleville	Nichol Ave.
Parker, George Douglas	F	Little Silver	Elizabeth
Parker, Rosalie Yoonnet	F	New Brunswick	22 Jones Ave.
Parvin, Boyd Carl	G	Elmer	78 Bayard St.
Pattison, Diantha Hart	H	Colonia	Colonia
Pennie, Kenneth Robert	F	New York, N. Y.	29 Jones Ave.
Perkins, Harold Center	F	Vineland	50 Welton St.
Platt, Richard Morris	G	Madison	193 George St.
Polinsky, Samuel	P	New Brunswick	George's Road
Pomeroy, Minora	P	Rahway	Rahway
Puerto, Marco Aurelio	G	Maywood	212 Redmond St.
Reichl, Robert	P	Vineland	56 Bishop St.
Reynolds, Frances Allen	H	Manasquan	30 Comstock St.
Roberts, Morris Harry, Jr.	G	Maplewood	206 Handy St.
Rogers, Joseph Harrison	F	Pemberton	204 Commercial Ave.
Rood, Herbert Percy	G	Mendham	52 Oliver St.
Rose, Paul Royal	P	Trenton	131 Townsend St.
Rosenkrans, John Victor	F	Newton	College Farm
Rosenthal, Eleanor Violet	H	New Brunswick	College Farm
Ross, Benjamin Frederick	G	Bernardsville	56 New St.
Ruckman, Arthur Ira	G	New Brunswick	R. F. D. No. 5
Ryan, Richard Butler Francis	P	Dunellen	Dunellen
Saltonstall, Henry Brayton	G	Elizabeth	Elizabeth
Schanze, Laura Paine	H	Newark	Newark
Schick, Hermann	G	Pattensburg	Nichol Ave.
Schiff, Aaron	G	Woodbine	196 George St.
Schnackenberg, Herman Henry	G	East Rutherford	56 New St.
Scoble, Charles Robert	G	New Brunswick	216 Seaman St.
Scott, Thomas Norris	G	Sicklerville	35 Oliver St.
Shane, Arthur Elliott	P	East Orange	273 George St.
Shield, Lansing Peter	P	New Brunswick	Highland Park
Shute, Walter Waddington	F	Bridgeton	208 Commercial Ave.
Singer, Romy	G	West Hoboken	56 New St.
Smith, Percy Harold	F	Weston	Weston
Smith, Robert Harmer	G	Oyster Bay, N. Y.	3 Elm Row
Solof, Nathan	G	Bridgeton	102 Commercial Ave.
Spargo, Norman Stanley	G	Dover	142 George St.
Spear, Edward Buckingham	G	Metuchen	Metuchen
Sperling, Edith Magdalene	P	New Brunswick	River Road
Stern, Israel	F	New Brunswick	210 Burnet St.
Stillman, Frank William	G	Rahway	Rahway
Stillwell, Madge	H	Freehold	93 Commercial Ave.
Stone, William Raymond	G	Trenton	Trenton
Stranahan, Grace Elder	F	New Brunswick	The Bayard
Swing, George Snellgrove	P	Hackettstown	Nichol Ave.
Tait, Madelyn Dana	H	Metuchen	Metuchen
Tait, William Walker	G	New York, N. Y.	56 Bishop St.
Taylor, Ralph	F	Cold Spring	50 Welton St.
Terry, Harry Lewis	F	Plainfield	Plainfield
Thomas, William Carlton	G	Pemberton	204 Commercial Ave.



# REPORT OF RUTGERS SCIENTIFIC SCHOOL.

Thourot, Clarence Constance	P	<i>Guttenberg</i>	140 George St.
Tice, Viola	H	<i>New Brunswick</i>	92 Albany St.
Van Dyke, Ethel	H	<i>Jamesburg</i>	Jamesburg
Van Nuys, Peter P.	G	<i>Belle Mead</i>	52 Bishop St.
Van Valkenburgh, Willard	G	<i>Bloomfield</i>	52 Oliver St.
Van Zandt, John Percy	G	<i>Blawenburg</i>	52 Bishop St.
Varnum, Nelson Edwin	F	<i>Atco</i>	140 Redmond St.
Vogler, George Robert	F	<i>Ridgewood</i>	255 George St.
Vogler, John Elias	P	<i>Ridgewood</i>	255 George St.
Vogler, Otto Charles	P	<i>Jersey City</i>	255 George St.
Wagener, Harold Lockwood	G	<i>New Brunswick</i>	137 Suydam St.
Wasson, Thomas Campbell	G	<i>Newark</i>	College Farm
Waterman, Herbert Langdon	G	<i>East Orange</i>	86 Bayard St.
Webb, Donald William	P	<i>Bound Brook</i>	Bound Brook
Weinblatt, Abraham Bernard	F	<i>Bridgeton</i>	56 New St.
Wenneis, Dolly	H	<i>Weehawken</i>	93 Commercial Ave.
Wharton, Lewis Morris	F	<i>East Orange</i>	29 Morris St.
Whelan, Raymond Pierson	G	<i>Jersey City</i>	54 Baldwin St.
Wible, Frank Nelson	G	<i>Deerfield</i>	196 George St.
Wilcox, Kenneth Osborn	F	<i>Westfield</i>	140 George St.
Wiley, John Jay	F	<i>Keyport</i>	56 Bishop St.
Wilson, Margery	H	<i>Metuchen</i>	Metuchen
Woolley, Charles Chester	G	<i>New York, N. Y.</i>	47 Bayard St.
Wyckoff, Kenneth Miller	G	<i>Red Bank</i>	52 Bishop St.

Short Course students ..... 178  
Total student registration..... 557





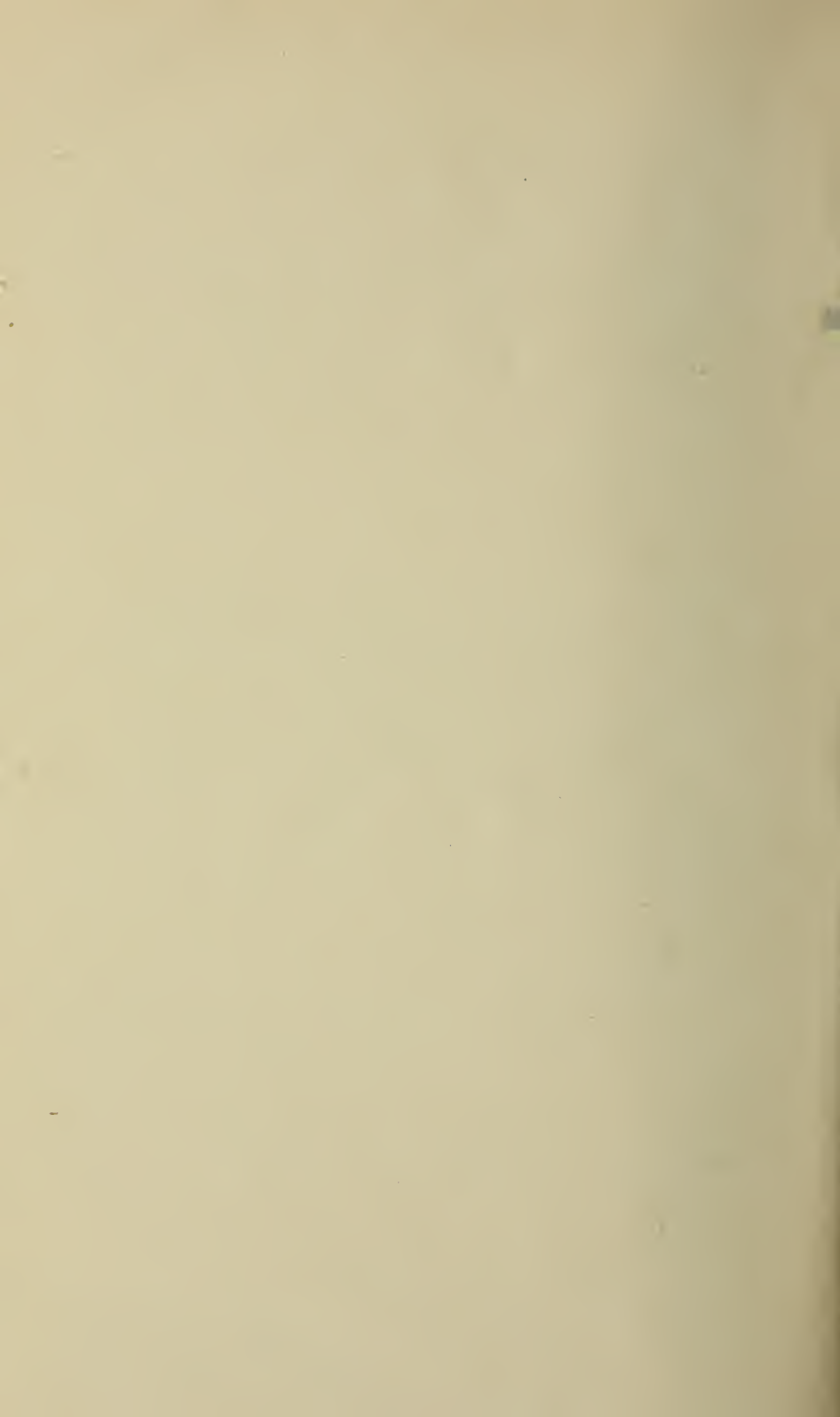


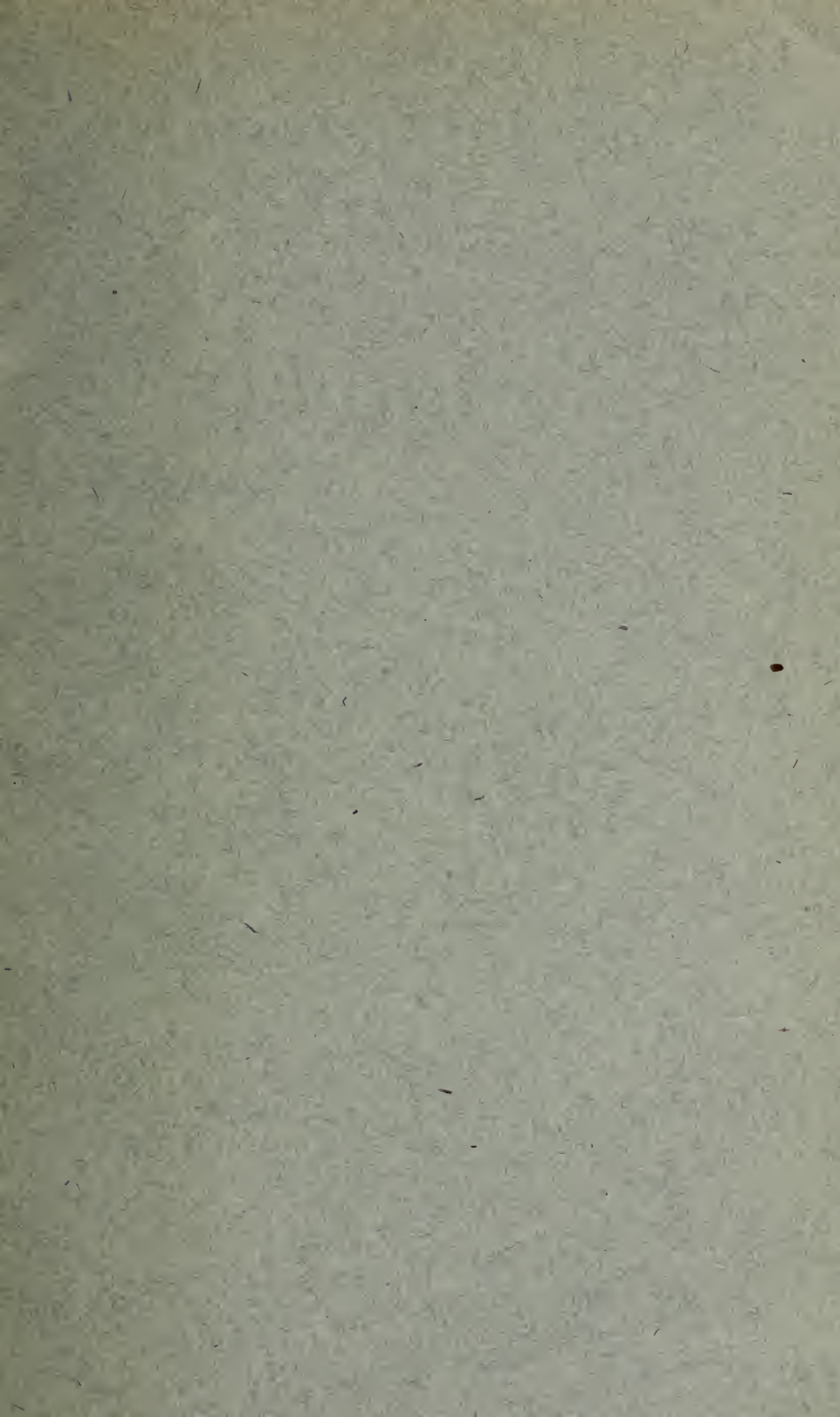














3 0112 105949025